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PHYSICIAN PAYMENT REVIEW COMMISSION

ANNUAL REPORT TO CONGRESS

1991

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PREFACE

In 1986, the Congress created the Physician Payment Review Commission to advise it on reforms of the methods used to pay physicians under the Medicare program. Since then, the Commission has conducted analyses of physician payment issues, provided a forum for groups representing physicians, beneficiaries, and other interests to present their views, and worked closely with the Congress to bring about comprehensive reforms in Medicare physician payment policy. Its recommendations formed the basis of 1989 legislation that created a new payment system consisting of a resource-based fee schedule, limits on the amount physicians may charge patients above the fee schedule amount, and Volume Performance Standards, coupled with expanded federal support for effectiveness research and the development of practice guidelines, to control expenditure growth.

The transition to payment under the Medicare Fee Schedule is set to begin on January 1, 1992. Accordingly, this report considers numerous policy and technical issues concerning implementation. These include refinements in the scale of relative work, modifications in the methods of calculating the practice expense and malpractice expense components of the relative value scale, and calculation of the budget-neutral conversion factor.

The findings and recommendations from four studies on specific aspects of the fee schedule that were mandated by the Congress in 1989 are included here. These studies consider methods for adjusting and allocating practice and malpractice expenses, geographic payment areas, payment to nonphysician practitioners, and payment to assistants-at-surgery. The chapters presented here fulfill the Commission's obligation to advise the Congress on these matters.

While the Commission's original mandate focused on relative payment and financial protection for beneficiaries, over the years this mandate has been substantially expanded. This report reflects the Commission's broader responsibilities in chapters on private payers and the Medicare Fee Schedule, profiling physician practice patterns, rural health services delivery, and medical malpractice reform. Two chapters provide a progress report of work on Medicaid physician payment mandated by the Congress in 1989. A final Medicaid report with recommendations will be transmitted to the Congress in July.

The Commissioners and staff have come to appreciate the major contributions made to the Commission's work by other government agencies, private organizations, and many individuals. During the past year, staff of the Health Care Financing Administration and other agencies of the Department of Health and Human Services, the General Accounting Office, the Prospective Payment Assessment Commission, the Congress, the Office of Technology Assessment, the Congressional Research Service, and the Congressional Budget Office provided valuable information and assistance to the Commission.

Social and Scientific Systems, especially Jansen Davis, Paul Menick, and Arlene Turner, provided exceptional programming support for many aspects of the Commission's work. Lynn Lewis provided timely and helpful editing of the report that was much appreciated by the staff.

The Commission has continued its longstanding practice of soliciting advice from physicians and other health professionals, beneficiaries, Medicare carriers, and other experts on physician payment issues. It has benefited from information they have provided, as well as public testimony, participation in Commission consensus process activities, and comments on draft chapters of the report.

Among the many people who contributed to the Commission's work in this report, we would like to single out the following who were particularly helpful to the staff and Commissioners: Richard Beisel, Marc Berk, Peter Budetti, Sandra Christensen, Steven Davidson, Debra Dayhoff, Allen Dobson, Doran Dunaway, Daniel Dunn, José Escarce, Robert Fine, David Gans, Ruth Hanft, Scott Harrison, Holly Harvey, Randall Haught, Steven Hayes, David Helms, Suzanne Pribyl Hoppszallern, William Koprowski, Terrance Kay, Kathleen King, Steven Lazarus, Jesse Levy, Candace Littell, Stephen Long, John Luehrs, James Margolis, Susan Marquis, Amanda McCloskey, Helene Michado, Thomas Mickler, Thom Miranda, Laura Mueller, Carlos Muñoz, Monica Noether, Greg Nycz, Ron Pfannerstill, Gregory Pope, Thomas Rice, LeRoy Roberts, James Rogers, Margo Rosenbach, Claudia Schur, Stephanie Spernak, Frederick Wenzel, and Donald Zais. Special thanks also go to David Juba and Terry Hammons whose work with the Commission staff is reflected in several chapters of this report.

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March 1991

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EXECUTIVE SUMMARY

In 1987 when the Physician Payment Review Commission issued its first report, Medicare outlays to physicians were growing at double-digit rates, placing an increasing burden on taxpayers and beneficiaries who share in financing program costs. The program's method of paying physicians on the basis of historical charges had severely distorted the pattern of relative payment across different physician specialties, services, and geographic areas. Concern was also growing about the financial liability of Medicare's 33 million elderly and disabled beneficiaries and their access to care. Physicians, beneficiaries, and policymakers alike agreed that this situation had to be corrected.

Today, the context for reform has changed. In the Omnibus Budget Reconciliation Act of 1989 (OBRA89), the Congress established a new system of payment. It consists of a Medicare Fee Schedule based on resource costs, limits on the amount physicians may charge patients above the fee schedule payment, and Volume Performance Standards (VPS) coupled with expanded federal support for effectiveness research and development of practice guidelines to control expenditure growth. This package of reforms built on a series of policy changes enacted since the early 1980s.

Implementation of the new system of payment has already begun. Many of the budget cuts included in OBRA89 and OBRA90 were designed to begin changes in relative payment toward estimated fee schedule values. Commission simulations suggest that by 1991, 20 percent of the change in relative values will have been accomplished. By 1992, when the first year of the transition to the fee schedule begins, a total of 52 percent of the change will have been put into effect. Under the VPS, standards for expenditure increases have already been set for fiscal years 1991 and 1992. Charge limits took effect at the beginning of 1991.

As in past years, the Commission's fifth annual report makes recommendations about many important policy and technical issues. This year's report will be received in a new legislative environment, however, that reflects an agreement between the congressional leadership and the Administration to reduce the deficit over a multiyear period. New budget rules, established under OBRA90, preclude legislation to increase spending without accompanying cuts in specific programs or across-the-board reductions in broad budget categories. This has led many congressional leaders to predict that there will not be an "OBRA91." Indeed, some believe that there will no Medicare legislation this year with the possible exception of technical corrections to OBRA90.

While the Commission acknowledges these constraints, this report contains recommendations that would require congressional action. They will be relevant whenever the Congress next writes Medicare legislation. The Commission believes, however, that these issues should be dealt with sooner rather than later. The Health Care Financing Administration (HCFA) has the authority to resolve other issues that are discussed in the report through regulation, but the Congress has strong interests in how they are resolved and will look to the Commission for advice. Indeed this report and HCFA's regulatory decisions could well influence congressional leaders' judgment about the desirability of considering legislation in 1991.

This year's report covers a broader range of topics than previous reports, reflecting both those issues to be addressed in conjunction with the implementation of the Medicare Fee Schedule and those related to the Commission's expanded responsibilities under OBRA90 (Sec. 4118 (j)). Many of the chapters on fee schedule implementation respond to specific mandates to the Commission from OBRA89. They examine issues and make recommendations on assistants-at-surgery, practice expense, malpractice expense, geographic payment areas, and payment to nonphysician practitioners (NPPs). Two chapters also describe work under way on physician payment under Medicaid. The Commission will complete its analyses and submit recommendations to the Congress in a report due on July 1, 1991.

Four chapters reflect the Commission's first efforts in new areas of responsibility spelled out in OBRA90. These include the impact of Medicare payment reform on private payers, rural health care, medical malpractice reform, and profiling of physicians' practice patterns. Work on refining Medicare's payment to health maintenance organizations (HMOs) and on graduate medical education is progressing but was not far enough along to include in this report.

MEDICARE FEE SCHEDULE: BROAD ISSUES

A significant portion of this report is devoted to major issues affecting implementation of the Medicare Fee Schedule. Among these are refinements in the scale of relative work, modifications in the methods of calculating the practice expense and malpractice expense components of the relative value scale, calculation of the budget-neutral conversion factor, and plans for monitoring beneficiary financial protection and access to care.

Refining the Scale of Relative Work

The Commission is reviewing and refining the scale of relative work for the Medicare Fee Schedule. As part of this process, it is analyzing data from Phase II of the Hsiao study and comparing it with data from other sources. It is also obtaining comments from physician organizations in five key areas: relative work values (RWVs) for non-evaluation and management (EM) services directly surveyed in Phases I and II, cross-specialty links, RWVs for imaging services, methods for assigning RWVs to surgical global services, and methods for assigning RWVs to EM services. Recommendations for refinements in these areas will be submitted to the Congress and made available to HCFA before the final regulations implementing the fee schedule are published.

A number of refinement issues have surfaced thus far. One concerns assigning RWVs to evaluation and management services. The pattern of relative work involved in providing visits of different durations and types is sensitive to the methodology used to estimate the relationship between encounter time and total work. Relationships based on data from the Hsiao study differ when they are estimated using individual physician responses rather than mean responses for each EM vignette. Relationships differ when they are based on estimates of work and time for EM vignettes rather than for visits provided in actual practice. Data from both the Hsiao study and the Commission's Visit Survey (PPRC 1991a) suggest that physicians responding to EM vignettes may have overestimated the amount of pre- and postservice (pre/post) work involved in actual practice.

The RWVs for EM services that Hsiao and his colleagues submitted to HCFA when they completed Phase II of their study are based on a regression model estimated with mean physician responses for EM vignettes. This method for estimating the relationship between encounter time and total work probably does not have an appreciable net effect on the share of aggregate work assigned to EM services. But it may lead to serious distortions in RWVs across levels of service and classes of visits. The Phase II RWVs appear to understate the value of shorter visits relative to longer visits. Moreover, these values do not reflect differences in effort (work per unit of time) between classes of visits (for example, or between a new and an established patient office visit). Since physicians in different specialties do not provide the same mix of visits, these distortions could result in inequitable payment.

Estimates of pre/post time for surgical global services may also need to be revised. The times in the Hsiao study are 18 percent higher, on average, than those developed through the Commission's surgical global service project (PPRC 1991b), and 23 percent higher than those estimated in the study of thoracic and cardiovascular surgery conducted by Abt Associates (Noether and others 1990).

Practice Expense

The Commission continues to support basing the practice expense component of the relative value scale on estimates of resources rather than on historical charges as specified in OBRA89. It has developed and tested the feasibility of a resource-based method and will refine it based on additional analysis and extensive discussion with interested parties.

The method tested by the Commission divides practice expenses into two categories, direct and indirect, as does common accounting practice. Direct costs are those that are clearly identified with the delivery of a service, such as the time a nurse spends assisting the physician during an intermediate office visit or the medical supplies used in setting a fracture. Indirect costs, such as rent, utilities, and management costs, are those that cannot be traced directly to any particular service. Data from national surveys of physicians have been used to split practice expenses into direct and indirect shares.

The Commission has collected data on direct costs from three multispecialty clinics. It has analyzed data on 300 services and is highly encouraged about the feasibility of obtaining accurate estimates. A survey of smaller practices is under way to gather additional data on rates of use and costs of medical equipment.

Indirect costs can be allocated to services on the basis of resource measures such as physician work or physician work and direct costs. This contrasts sharply with OBRA89, which allocates all practice expense on the basis of historical charge levels.

This resource-based method suggests application of site-of-service differentials to more services. When a service is provided in both office and non-office settings, the practice expense component for the office setting includes both the direct and indirect costs. The practice expense component for the non-office setting includes only indirect costs plus direct billing cost. Under the assumption that indirect costs continue when the physician is practicing outside of the office, the indirect costs allocated to each setting are the same for a given service.

HCFA has recently authorized its carriers to reduce the reasonable charge for 282 services by 40 percent when the service is provided outside the office setting. While application of additional site-of-service differentials is consistent with the Commission's approach, use of a fixed-percentage differential ignores the variation in direct cost suggested by the Commission's estimates. The HCFA policy risks serious distortions in relative values and consequent limitations of access.

Analysis of preliminary data suggests that the resource-based approach to practice expense would cause substantial differences in payments for certain services under the Medicare Fee Schedule. In general, EM services provided in the office would have higher payments, while surgery and technical procedures performed in non-office settings would have lower payments.

The Commission will issue a report later this year that includes a more detailed discussion of the methodology used, the data collected, and simulations of changes in the pattern of Medicare payment. It expects the report to stimulate discussion on the limitations of the OBRA89 method and on refinement and elaboration of the resource-based approach.

Malpractice Expense

As with practice expense, the OBRA89 method of calculating the malpractice expense component of the relative value scale is not resource-based and has several deficiencies that lead the Commission to call for its revision. Under the OBRA89 method, which is based primarily on historical charges, payment for a given service will be the fraction of the 1991 national average allowed charge that corresponds to the fraction of physician revenue used to pay for liability insurance.

Since the same malpractice expense fraction is used for every service provided by physicians in a given specialty, the OBRA89 method does not differentiate among services that expose physicians to different levels of risk. Moreover, averaging across specialties will result in systematic underpayment to physicians who perform high-risk procedures. Finally, the method uses premium-to-revenue ratios based on survey data in which sampling error may distort the estimates of premiums paid by each specialty.

The Commission supports basing the malpractice expense component of the relative value scale on estimates of the risk of service (ROS). It has developed and tested the feasibility of such a method and will refine it based on discussion with interested parties.

The ROS method bases payments on differences in the service's risk and the overall premium confronting the average physician. Consequently, relatively more premium dollars are assigned to higher risk services than to lower risk services. Under the ROS method, payments would be determined by spreading the malpractice premium for a standard policy over services in proportion to physician work. This proportion would be allowed to vary with the risk of the service. The relative risk measure assigned to a service would come from data on premiums by risk class. The malpractice expense payment for an office visit, for example, would be set at a level that reflects the resource costs of malpractice coverage for the lowest risk class of physician who routinely provides office visits. The additional premium dollars paid by physicians in higher risk classes would be spread over the higher risk services they provide--the same services that place these physicians in higher risk classes.

Simulation results indicate that the ROS method would reduce the payment distortions that will occur under the OBRA89 method. The ROS method is also easier to update, an important advantage since malpractice premiums often change by substantial amounts.

Geographic Adjustment Factors and Payment Areas

The geographic adjustment to the Medicare Fee Schedule will be comprised of three components: one for physician work, another for practice expenses, and a third for malpractice expense. The three will be combined with distinct weights for each service, so that the total payment to physicians will essentially reflect a case-mix adjusted geographic adjustment factor (GAF).

The Commission has reviewed the measures described by HCFA in the Model Fee Schedule (Federal Register 1990) for the various elements of the GAF and finds them to be appropriate. Much of the Commission's analysis focused on whether the GAF understates the prices of inputs (for example, employees, supplies, and office space) faced by rural physicians; it found no evidence for such a bias. A 1988 survey of nurses' wages showed an urban/rural relationship similar to that in the 1980 Census data used in the GAF. The Commission could not find any indexes of commercial rents covering both rural and urban areas, so it was unable to validate the apartment rental cost index from the Department of Housing and Urban Development (HUD) used in the GAF. In urban areas, the HUD index tracked well with two commercial rent surveys and a cost-of-construction index. The Commission recommends that the Congress direct an appropriate federal agency to collect data on commercial rents and develop a national index suitable for use in the GAF. HCFA's plans to refine and update the malpractice expense component are likely to make this sensitive element of the GAF far more accurate.

The choice of payment area boundaries reflects trade-offs among accurate tracking of input price variation, minimization of fee differences at boundaries, and administrative and conceptual simplicity. Using these criteria, the current payment localities were judged inferior to several alternatives. The Commission recommends replacing the current payment localities with statewide areas in all states except the 15 with the highest degree of within-state variation in input prices.[1] In each of these 15 states, up to five payment areas would be created by metropolitan statistical area (MSA) categories: more than 3 million; 1 to 3 million; 250,000 to 1 million; fewer than 250,000; and nonmetropolitan.[2] This recommendation would result in 94 payment areas in the continental United States, 34 of which are statewide, compared with 237 under the current locality configuration, 14 of which are statewide.

This configuration captures about 90 percent of price variation, as measured by a county-level GAF. While this is comparable to the performance of the current locality configuration, it achieves this degree of tracking of price variation with far fewer boundaries. Large payment differentials at state borders are avoided by allowing some intrastate variation in states with the highest price variation. Moreover, unlike the current locality boundaries, the recommended area definition does not divide counties. This and the smaller number of areas substantially ease the problems of developing accurate data to measure the GAF. It is also simpler than localities, since it is based on familiar geographic units.

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[1] All current statewide localities would be maintained as such.

[2] The 29 MSAs that cross state borders will be considered to fall entirely within the state that includes the largest percentage of the MSA's total population.

Fee Schedule Conversion Factor

The fee schedule conversion factor will be calculated so that projected outlays under payment reform in 1992 match outlays that would have occurred under the existing system. One of the more difficult aspects of this task is projecting the responses of physicians and beneficiaries to changes in fees. If the net change in behavior increases the volume of services, budget neutrality requires that this be offset through a lower conversion factor.

Besides reviewing the research literature on the effect of price changes on volume (often referred to as the behavioral offset), the Commission has conducted its own research on the impact of the reductions in overvalued procedures made under OBRA87. It has concluded that in the short run, volume changes partially offset moderate price cuts. But there is enormous uncertainty in extrapolating from these results to an estimate of the overall impact on volume of the implementation of the Medicare Fee Schedule. First, the price reductions anticipated under the fee schedule are generally larger than those previously studied and will come after years of previous reductions in fees. Second, prices will increase for substantial numbers of services. With one exception, the effects of price increases on volume of services have not been studied. Third, volume of services may be affected by changes in physicians' decisions to accept assignment, but these are extremely difficult to project.

What is fortunate, in light of this uncertainty, is that the Volume Performance Standard mechanism provides an opportunity to correct errors in projecting the behavioral offset. Thus, if the offset turns out to be larger than projected, the VPS mechanism will reduce updates in the future. On the other hand, if the offset is smaller than projected, the mechanism will compensate by increasing future updates. This mechanism is not perfect. It has an average lag of 21 months, and the default formulas do not allow for full adjustments for large volume increases. But its presence transforms the decision into one of whether physicians or the Medicare program should bear the short-term consequences of errors in this difficult projection. In light of the available evidence, the tremendous uncertainty about the magnitude of the volume response to new Medicare payments, and the ability of the VPS mechanism to correct errors, the Commission recommends a modest 1 percent reduction in 1992 fee levels to reflect induced changes in volume.[3]

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[3] OBRA89 specifies that budget neutrality be achieved through a reduction in the conversion factor. But since many 1992 fees will be based on a blend of historical charges and the fee schedule, a reduction in the conversion factor much larger than 1 percent would be needed to achieve a 1 percent reduction in fee levels. Simulations suggest that a 3 percent reduction in the conversion factor is necessary to reduce fee levels by 1 percent.

The asymmetry of the five-year transition to payment under the fee schedule will have a substantial effect on conversion factors in 1993 and later years. Services scheduled to increase under the fee schedule will move toward their final relative values more rapidly than services scheduled to decrease. Since OBRA89 specifies budget neutrality for 1992, the payment rates for that year must be reduced by about 2 percent to offset this asymmetry. But the law specified that this adjustment be accomplished entirely through modifying the conversion factor. Thus to reduce payment in 1992 by 2 percent, the conversion factor must be reduced by 6 percent. But in later years, when the asymmetry reverses, the reduction in the conversion factor is not reversed. As a result by 1996, the conversion factor will be substantially lower than it would have been if the fee schedule had been implemented in one step. The difference will be 6 percent if no behavioral offset is assumed, but will be 9 percent with a 1 percent behavioral offset or 15 percent with a 3 percent behavioral offset. These effects may be much larger than had been contemplated when OBRA89 was drafted.

These fee reductions are of particular concern because they come on top of past budget cuts. When budget-neutrality calculations are made for 1992, reductions in fees from OBRA87, OBRA89, and OBRA90 will result in a lower conversion factor. Starting with 1988 as a base, these provisions have had the effect of reducing fees by 15 percent in real (inflation-adjusted) terms.[4] Thus, with an increase in relative payments for EM services of 29 percent, physicians will find that fee levels for those services will have increased by only 10 percent in real terms since 1988.[5] While the payment reform will accomplish a substantial change in relative payment between EM and other services, some of the expectations of substantial absolute increases in payments for EM services will not be met.

Ensuring Beneficiary Financial Protection and Access to Care

Concerns about the impact of policy changes on beneficiaries' financial liability and access to medical care are an integral part of the Commission's work. Three provisions of OBRA89, recommended by the Commission in previous reports, are expected to increase financial protection for Medicare beneficiaries. These include limits on balance billing, required assignment of services to beneficiaries whose cost sharing amounts are paid by Medicaid, and physician submission of all claims. When the balance billing limits are fully phased in, balance billing will have been reduced by 75 percent. Overall, cost sharing at the point of service will decrease by 28 percent. New laws in Rhode Island, Pennsylvania, and New York provide an additional measure of protection to beneficiaries in those states.

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[4] This analysis reflects fee changes from OBRA87 that took effect in 1989 and all fee changes from OBRA89 and OBRA90 that will affect the conversion factor. The last includes the 0.4 percent reduction in the 1992 update and the provision on payment for electrocardiograms (see Chapter 13). It does not reflect the forthcoming decision on the 1992 update to be made as part of the VPS process. This reduction is roughly equivalent to the rate of inflation as measured by the Medicare Economic Index. Thus, in nominal terms, fee levels in 1992 will be similar to what they were in 1988.

[5] The 29 percent relative increase for EM services comes from the Commission's simulations of Phase I of the Hsiao study. The final figures will reflect Phase II, Phase III, and efforts by the Commission and others to refine relative work values.

While payment reform holds great promise for improving access, the Commission maintains that substantial efforts to monitor the impact of changes on beneficiary liability and access are essential. It recently established a panel on access comprised of physicians, beneficiaries, and academic experts. It plans to draw on this panel's advice in developing recommendations on monitoring strategies and in commenting on HCFA's analyses of the effects of payment reform on utilization and access. The Commission considers the Current Beneficiary Survey to be critical to understanding the effects of reform on access. It urges that the survey receive sufficient support to fulfill its role.

Financial protection of beneficiaries also depends on how well they understand the Medicare program and can detect inappropriate billing practices. The Explanation of Medicare Benefits (EOMB) form and limitation of liability agreements are two important sources of information for beneficiaries. HCFA is redesigning the EOMB to make it more understandable. The Commission reiterates its 1990 recommendations that the maximum charge for the total claim should be calculated on the EOMB form and that beneficiaries should be informed that they are not liable for any amount above this charge limit. The Commission also recommends that all Medicare carriers use a standardized EOMB form.

HCFA has established clear policy regarding the content and use of limitation of liability agreements. HCFA and organizations representing physicians and beneficiaries must nevertheless make further efforts to ensure that all carriers are aware of the regulatory requirements and that physicians and beneficiaries are informed about their rights and responsibilities under the law.

MEDICARE FEE SCHEDULE: SPECIFIC ASPECTS

The report also considers a number of specific aspects of the fee schedule. These include coding for EM services, payment issues related to podiatrists and optometrists, anesthesia, and electrocardiograms (EKGs). Findings and recommendations from two studies mandated by OBRA89--assistants-at-surgery and nonphysician practitioners-are also presented.

Coding for Evaluation and Management Services

The Commission has proposed a coding system for visits that can be used in a resource-based fee schedule. This system closely follows recommendations of a consensus panel convened jointly by the Commission and the American Medical Association. The

Commission made some refinements in the panel's proposals to address concerns raised by specialty societies, the Current Procedural Terminology (CPT) Editorial Panel, and HCFA staff. The CPT Editorial Panel has also developed a coding system based on the consensus panel's proposals. It made more substantial changes, however, especially in the definitions of levels of service.

Under the Commission's system, separate classes of codes are used to distinguish 12 types of visits that differ by effort or practice expense. Visits within each class are differentiated by a uniform set of five levels of service defined on the basis of content and typical physician encounter time. Each level of service describes the complexity of medical decisionmaking and the extent of services involved in visits that typically take physicians a certain amount of time to provide. The system also incorporates a modifier to adjust payment for visits with patients with communication barriers, disabling cognitive or physical impairments, or an unusual need for counseling or coordination of care.

The new coding system would permit assignment of relative values that accurately reflect the resource costs of visits. A total work value would be assigned to each code using the typical encounter time in the level of service and the relationship between total work and encounter time for that class of visit. Payment per level of service would vary across classes, reflecting differences in effort and practice expense.

The system would also help ensure equitable payment for different types of physicians in a fee schedule without specialty differentials. Since the classes and levels of service in the new coding system recognize a broad spectrum of visits, physicians in each specialty would be able to choose codes that accurately reflect the EM services they provide.

The incorporation of time in the codes would provide payers with a more accurate and less intrusive means for screening EM claims. Time data from surveys could be used to predict the mix of visit codes each specialty would be expected to use for billing. Payers could then screen each physician's EM claims by comparing them with the profile for his or her specialty.

The success of the new coding system depends upon having levels of service that are clearly defined and easy for physicians to use. The content descriptors also need to correlate well with time and be congruent with the typical time in each level of service. The CPT Editorial Panel is currently pilot-testing a coding system in which the number, content descriptors, and times in the levels of service differ for each class of visit. The Commission is concerned that this system might introduce unnecessary complexity and could compromise the goals of coding reform. The Commission hopes that the pilot test results in refinements that meet the needs of a resource-based payment system.

Payment to Podiatrists and Optometrists

Podiatrists and optometrists should be paid under the Medicare Fee Schedule using the same relative values and conversion factors as applied to doctors of medicine and osteopathy. Current Medicare policy makes no distinction in implementing payment. The Commission found no evidence on the comparability of services billed under a procedure code by different practitioners. Without such information, it sees little basis for recommending a change in policy. The Commission does, however, have reservations about Medicare's use of the term "physician" to describe health professionals whose scope of practice is more narrowly defined than that of doctors of medicine or osteopathy. The term "limited license practitioner" better reflects their more narrowly defined scope of practice.

The Commission is also concerned about poor communication between organizations representing these practitioners and medical specialty societies and is hopeful that these channels can be improved. The success of payment reform depends on the willingness of practitioners and organizations representing them to work cooperatively on issues of mutual interest.

Paying Nonphysician Practitioners Under the Medicare Fee Schedule

OBRA89 mandated a study of several issues related to Medicare payment to nonphysician practitioners who are permitted to bill Medicare Part B for their services. These include the impact of payment reform on NPPs, the proper level of payment, and whether NPP payments should be included in the VPS process.

Payment for most NPP services is limited to a percentage of what physicians are paid for the service. Since NPP services are disproportionately evaluation and management, in general, their payments will increase under payment reform.

The Commission's study of NPPs included an extensive review of the literature on the comparability of services provided by NPPs and physicians; meetings with organizations representing NPPs to learn about their training, education, and scope of services; and analysis of testimony received from interested parties. While the Commission recognizes the important role of NPPs in providing care to beneficiaries, it finds no basis for changing the present policy of differential payment. The differentials should, however, be based on estimates of differences in the resource costs required to provide the service--work, practice expense, and malpractice expense. Separate differentials should be calculated for each category of NPP.

For the work component, the differential should reflect differences in investments in human capital: tuition expense and foregone earnings. As a rough example of these calculations, the work component for physician assistants (PAs) would be valued at 87 or

75 percent of the physician level, depending, respectively, on whether the high rates of return that physicians receive on their training are applied to NPP training as well or whether rates of return that other professionals with postgraduate training receive are applied.[6]

No differential is proposed for practice expense since it is assumed that NPPs and physicians face similar rent, supply, and personnel costs when providing a given service. The differential for the malpractice component should reflect premium differences. Combining the three components of the relative value scale using the rough calculations for PAs, the overall payment would be 90 or 84 percent of the physician payment.

The Commission believes that this methodology can be used to set fair payments to clinical psychologists (CPs) as well. Since CPs have much more education and training than other categories of NPPs, the resource-based methodolgy outlined above would result in payments close to or even the same as those for physicians.

The Commission recommends higher payment for NPPs in areas where access to care is a particular problem. NPPs practicing in Health Professional Shortage Areas should receive the same percentage bonus to their payment as that received by physicians practicing in those areas.

All services provided by NPPs should be identified as such on claims forms, specifying the NPP professional involved. Modifiers to CPT codes should be used to achieve this. This would facilitate reform in administering the "incident to" provision that allows payment at the physician level for services provided by NPPs incidental to a physician's professional service. When physicans bill for evaluation and management services provided by NPP employees, these services should be paid at the NPP level, rather than at the physician level. Expenditures for NPPs should be included in the VPS, and fees for NPP services should be updated through the VPS process.

Anesthesia Payment Issues: Use of Time Units and Payment to the Anesthesia Care Team

The Commission has addressed two issues related to payment for anesthesia services: use of anesthesia time units and payment to the anesthesia care team, comprised of an anesthesiologist and two or more certified registered nurse anesthetists (CRNAs).

Traditionally, anesthesia services have been paid on the basis of relative value guides that include both base and actual time units. HCFA is concerned both that start and end times for anesthesia services are difficult to determine and that payment for actual time is inconsistent with the way Medicare pays other physicians.

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[6] Recent developments such as Medicare budget cuts could lead to decreases in rates of return. This would increase the latter number.

After considering two alternatives, the Commission recommends continuing the use of actual time. It rejected paying on the basis of median time or on the basis of the sum of actual surgical time and median pre/post time. Within a given anesthesia CPT code, time varies greatly, depending on the difficulty of the surgical procedure, patient needs, and the surgeon's speed. Use of median time, therefore, would be inequitable to many anesthesiologists. In addition, the latter alternative would require data that are not available. Development of a better operational definition of anesthesia time and more rigorous procedures to validate time would best address criticisms of current policy.

Medicare pays more per case for services provided by the anesthesia care team than for those provided by an anesthesiologist or a CRNA working alone. This differential will be magnified with the phase-in of the OBRA90 provision that raises payment to CRNAs.

The Commission sees no basis for paying more per case simply because a different mix of practitioners provides the service. Research has shown that triage and assignment of anesthesia providers do not occur on a case-by-case basis. Rather, decisions to use either the team or the solo approach follow regional patterns reflecting practice style preferences among hospitals and practitioners. The Commission recommends that the total fee for the services of an anesthesia care team not exceed the payment made to the solo anesthesiologist for the same service.

Medicare should specify the proportion of the team payment that goes to the anesthesiologist and to the CRNA. These proportions should provide adequate incentives for both the anesthesiologist and the CRNA to practice in a team. The CRNA payment levels specified in OBRA90 would be inappropriate under this policy. If they are maintained, the reduction in payment for the anesthesia care team would lead to anesthesiologists earning less per hour when supervising CRNAs than when practicing alone.

The Commission also recommends that anesthesiologists who supervise either two residents or one resident and a CRNA should be paid on the same basis as when they supervise two CRNAs. This policy would treat anesthesiologists similarly to other teaching physicians and render teaching anesthesiologists financially indifferent to the types of practitioner they supervise.

Payment to Assistants-at-Surgery

Wide variations in utilization of assistants for some surgical procedures indicate that their use is often discretionary and that Medicare may be paying for medically unnecessary services. To reduce inappropriate use of assistants-at-surgery, the Commission recommends profiling in conjunction with educational feedback. If focused on those procedures for which use of an assistant is most variable, such a program could potentially change physician behavior and avoid cumbersome administrative processes like those associated with prior authorization. Specialty societies could assist Peer Review Organizations or carriers in developing and implementing the educational feedback process. Those physicians who, after sufficient notice, continue to use assistants inappropriately should be subject to medical audits.

Under OBRA90, the Medicare payment to physicians who serve as assistants-at-surgery was reduced from the traditional 20 percent of the principal surgeon's payment to 16 percent. Results from Phase II of the Hsiao study, however, suggest that the 16 percent rate is lower than estimates of the resource costs. When combined with the recent and anticipated reductions in payments for surgical procedures, the 16 percent rule may make it difficult for surgeons to recruit assistants.

The Commission recommends that payments to assistants-at-surgery should be based on resource costs. Until resource-based relative values are developed for more procedures, it would be appropriate to return payments to assistants-at-surgery for all procedures to 20 percent of the surgical payment under the Medicare Fee Schedule.

Payment for Electrocardiograms

The Commission supports the congressional goal of ensuring that the price and utilization of EKGs are appropriate. OBRA90 addressed these problems by limiting payment for EKGs as a separate service. This approach should be made more consistent with the principles of a resource-based fee schedule.

Some interpret the OBRA90 provision as mandating the bundling of EKG interpretation with payment for visits. This would be inequitable unless visit payment varied by diagnosis or other factors. The Commission plans to examine alternative methods of bundling EKG, laboratory, and procedural services with visits to determine whether a satisfactory method can be derived.

While methods for bundling are being developed and assessed, the Congress should modify the OBRA90 provision and pay for EKGs separately from visits at the final resource-based price for both the professional and technical components. To avoid reducing payments for other services by paying for all EKGs (albeit at a lower price), the transition to final fee schedule values should be accelerated for procedures surveyed for the first time in Phase II of the Hsiao study that are considerably overvalued.

To address overutilization of EKGs, Medicare should foster development of practice guidelines for the test. It also should profile physicians' practice patterns and provide educational feedback. Those physicians who continue to provide the services at rates substantially in excess of the norm should be subject to medical audit.

BEYOND THE MEDICARE PROGRAM

The report considers a number of topics reflecting its expanded mandate under OBRA90. These include the impact of the fee schedule on private payers, physician payment under Medicaid, rural health delivery systems, medical malpractice reform, and profiling physicians' practice patterns.

Private Payers and the Medicare Fee Schedule

Private payers have expressed interest in revising their methods of physician payment. Many support the objectives of Medicare payment reform but have yet to determine the extent to which physician markets will permit changes in relative values. Although few plan to adopt the Medicare Fee Schedule in total, many are contemplating at least marginal changes in relative values to reflect the direction of Medicare changes.

Private payers face limits to the magnitude of changes they can institute. Insurers offering indemnity policies are concerned that balance billing for technical procedures will increase. Payers that contract with physicians are concerned about whether specialists whose fees would fall would agree to participate in sufficent numbers. All are concerned about the risks of being in the vanguard.

More extensive or more rapid changes by private payers would require public regulation of their payment policies. Under an all-payer system, the Medicare relative value scale could be used by each of the payers. A public body would determine payment rates for the various physician services. While the conversion factors used by different payers need not be the same, the entity that determines rates would have a deliberate policy concerning how they would differ. Conversion factors could be updated through volume performance standards or a similar mechanism. Balance billing would be limited, but again, the limits could differ by class of payer.[7] The entity making these decisions would balance the interests of physicians, private payers, public payers, and patients.

Adoption of an all-payer system would be compatible with competitive initiatives that many private payers are already pursuing to contain costs. Health plans could be restricted from competing through discounts from providers. Competition on the basis of success in controlling inappropriate utilization, however, would not be affected.

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[7] For example, balance billing could continue to be prohibited for Medicaid patients and could be larger for privately insured patients than for Medicare patients.

Physician Payment Under Medicaid: Current Patterns

As part of its congressionally mandated study on Medicaid physician payment, the Commission contracted with the National Governors' Association to survey state Medicaid programs. The survey collected data on the physician payment methodologies used, the frequency of payment updates, and problems related to physician participation. It also gathered data on fee levels for 23 services commonly used by Medicaid beneficiaries.

Most states use either fee schedules or reasonable charges to determine physician payments, with fee schedules having become the dominant method over time. Although 35 states reported increasing physician fees within the past two years, only 21 have increased fees for all services. Some states have increased fees only for maternity and pediatric services.

Most states report problems with physician participation by both geographic area and specialty. Low fees were cited as the most common factor in discouraging participation. In addition to raising fees, states have taken a number of steps to address this problem. These include electronic claims submission, toll-free "hot lines," simplified billing, and expanded public relations efforts to recruit and retain physicians.

Data on fees show wide variation across states. This may reflect differences in physician service markets as well as deliberate policy decisions made by states. Such decisions often reflect trade-offs between payment levels, the number of optional services covered, and breadth of eligibility.

The data also confirm earlier analyses indicating that Medicaid programs pay physicians considerably less than private payers and Medicare. Nationally, Medicaid fees are 69 percent of Medicare prevailing charges, but this ratio varies considerably across states.

Physician Payment Under Medicaid: Options for Reform

The Commission is considering a number of options for reforming Medicaid physician payment. Several involve altering payment rates to physicians. Others encourage alternative delivery mechanisms or change the administrative structure of the Medicaid program. The options described by this report will inform recommendations to be made by the Commission later this year. They will be submitted to the Congress by July 1, 1991.

Fee Options. The first fee option would raise payments to Medicare levels or some percentage of them, changing relative values and increasing total physician expenditures in most states. A general fee increase to the Medicare Fee Schedule would boost expenditures for physician services by 36 percent, assuming no induced changes in the volume and setting of services.

Other fee options would raise fees for selected services, geographic areas, or physicians. For example, fees could be increased for obstetric and pediatric services. Fee increases could be targeted to areas where Medicaid beneficiaries have difficulty finding care because of low physician participation. Physicians who accept additional responsibilities for certain patients (such as managing referrals, hospital admissions, and ancillary services) could also receive higher fees.

In general, raising fees alone may not solve access problems because physician supply in some areas, particularly the inner city and rural areas, is insufficient. Other factors may continue to discourage physicians from practicing in these areas regardless of fee increases.

Non-Fee Options. An alternative to increasing fees is increasing funding for other providers of care. Institutional providers, such as hospital outpatient departments and community health centers, provide a significant amount of care to Medicaid beneficiaries. It may be possible to build on these sources by creating incentives for hospitals to establish appropriate primary care settings, increasing grants to operate community health centers, and expanding the National Health Service Corps (NHSC). Access to care could also be improved if beneficiaries who currently have no usual source of care were enrolled in HMOs. In areas where HMO penetration is high, incentives could be developed to encourage HMOs to accept contracts with Medicaid.

Administrative reforms could improve physicians' willingness to deal with the Medicaid program. Less cumbersome claims processing may increase participation, for instance. Concerns about malpractice also appear to affect Medicaid physician participation. States have experimented with various solutions, including indemnifying certain physicians, subsidizing malpractice premiums, and limiting liability for certain adverse outcomes. There is little information about how these non-fee approaches affect physician participation.

Mechanisms for Reform. The federal government could either mandate changes in physician payment or provide incentives for states to make reforms. Clear directives like general fee increases can be effectively implemented through mandates, while more targeted policies requiring greater flexibility in implementation lend themselves better to incentives. Experience has shown that without mandates, state responses will be variable. Mandating reform is likely to encounter strong state opposition, however.

Financing could be accomplished through a variety of mechanisms. Changing the matching grant formula would be most appropriate for fee options. The federal match for physician services could be set at a higher rate than for other services. An alternative approach would be to allow states to "buy in" to Medicare Part B coverage for Medicaid recipients.

Project grants could also be used to encourage the expansion of alternative sources of care or to develop administrative procedures that reduce burdens on physicians.

Improving Access to Health Care in Rural Areas

Since its first report, the Commission has proposed policy changes to increase access to physician services for the underserved. OBRA90 expands the Commission's mandate by directing it to examine payment incentives to improve access in large urban and rural areas. During the past year, the Commission focused its attention on access problems in rural areas. Among these were shortages of health professionals; facility closures; and problems associated with a population that is poorer, older, and less insured than that in urban areas. It also examined the range of federal programs designed to address these concerns.

The Commission sees the need for continued federal assistance to rural health systems. It supports congressional actions to revitalize the NHSC, improve the financial stability of community and migrant health centers, encourage certification of rural health clinics, and develop state offices of rural health. It also endorses continued funding for training in primary care and rural practice. The Commission's future work will focus on payment policies that reinforce these efforts. It will examine options such as payment mechanisms to increase retention of NHSC personnel, Medicaid bonus payments for physicians in shortage areas, coverage of telecommunication consultations, and incentives for development of regional satellite networks by large, multispecialty group practices.

Profiling of Physicians' Practice Patterns

Profiling is increasingly being used help achieve the goals of utilization review, cost containment, quality assurance and improvement, and research into the effectiveness and appropriateness of care. Profiling shifts the focus of inquiry from individual services to patterns derived from many services. This makes the process of assessment more efficient and less intrusive for the practitioner. Profiling is particularly well suited for assessing outpatient services that are generally high volume and low unit cost. It could also contribute to the success of Volume Performance Standards by helping to decipher changes in patterns of care.

Several issues must be addressed for profiling to be used effectively. These relate to the types and quality of data used, the interpretation and feedback of the results, the involvement of the medical community, access to information about the methods and results of profiling, and the coordination of profiling activities. The Commission plans to hold a conference to focus more attention on these issues and to help it develop priorities and a workplan.

Medical Malpractice Reform

Although the malpractice problem has been defined by increases in the number of claims and the size of payments and insurance premiums, it should be regarded first as a problem of medical injury and its avoidance. The number of medical injuries (including negligent injuries) is significant, particularly in the Medicare population.

A growing body of evidence casts doubt on whether the present malpractice system adequately achieves any of the goals commonly ascribed to it. These include improving quality by deterring negligent medical injury; compensating patients who experience negligent medical injury; promoting data collection and research on how to reduce medical injury; minimizing administrative costs, defensive medicine, and other harmful effects on the health care system; and holding medical professionals accountable for negligent care.

Whether the current malpractice system can be improved so that it meets these goals or whether different mechanisms would be more effective must be determined. In the year ahead, the Commission will assess the merits of alternative systems to ensure quality and compensate injury and will explore whether these two functions should be addressed by different systems.

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CHAPTER 1

THE CONTEXT FOR REFORM

In 1987 when the Physician Payment Review Commission issued its first report, Medicare outlays to physicians were growing at double-digit rates, placing an increasing burden on taxpayers and beneficiaries who share in financing program costs. The program's method of paying physicians on the basis of their historical charges had severely distorted the pattern of relative payment across different physician specialties, services, and geographic areas. Concern was also growing about the financial liability of Medicare's 33 million elderly and disabled beneficiaries and their access to care. Physicians, policymakers, and beneficiaries alike agreed that this situation had to be corrected.

Today, the context for reform has changed. With the passage of the Omnibus Budget Reconciliation Act of 1989 (OBRA89), the Congress approved a new system of payment consisting of a Medicare Fee Schedule based on resource costs, limits on the amount physicians may charge patients above the fee schedule amount, and Volume Performance Standards (VPSs), coupled with expanded federal support for effectiveness research and the development of practice guidelines, to control expenditure growth. This package of reforms built on a series of policy changes enacted since the early 1980s. The direction of long-term reform has since been reaffirmed by physician payment provisions of OBRA90.

Every year in its annual report, the Commission presents statistics describing trends in spending for Medicare physician services, assignment and participation rates, and out-of-pocket expenses borne by beneficiaries. The updated figures indicate that, although the context for reform has changed, the trends that precipitated reform continue. This chapter begins with a brief overview of these trends. It then looks at the policy responses that laid the building blocks for passage of the OBRA89 reforms and the challenges involved in their implementation.

Over the next decade, these reforms will lead to substantial changes in patterns of payment, expenditures, and the delivery of medical care. This chapter provides a context for understanding the changes that lie ahead as well as the analyses and recommendations included in this report to the Congress.

THE CALL FOR REFORM

The primary motivation for payment reform has been to replace Medicare's method of payment based on customary, prevailing, and reasonable charges (CPR) with a more rational and equitable pattern of payment. While CPR was meant to provide flexibility in setting prices to reflect variations in practice styles and local markets, this reliance on historical fees resulted in an inequitable system of pricing. Over the years, wide payment differentials were perpetuated among services, localities, and specialties.

Three attributes of the CPR methodology are noteworthy. First, surgical and technical procedures are overpaid relative to visits and consultations. Second, physicians providing identical services may receive markedly different payments because fees are based on the individual physician's past charges. Third, the method is complex to administer and understand.

Controlling Program Costs

Between 1980 and 1989, Medicare costs per enrollee for physician services almost tripled, growing from $376 to $1,042 (Board of Trustees 1989). This rate of increase exceeds growth in consumer prices, gross national product, and national health expenditures (Figure 1-1) (CRS 1989).

Expenditures for physician services consume a substantial and growing amount of public and private resources. Medicare's share of national expenditures for physician services has doubled over the past 20 years, rising to $27 billion in 1990 (Figure 1-2). Total Medicare payments (physician, hospital, and other services) now account for almost 8 percent of the federal budget, up from slightly over 5 percent in 1980 (Figure 1-3).

Rapid increases in Medicare program costs are especially troublesome at a time when federal policy decisions have been driven by concern about the size of the budget deficit. Because the Congress weighs competing social needs within the context of the annual budget process, the level of Medicare funding is constrained by decisions about funding levels for other priorities such as national defense, education and social services, and income security (Figure 1-3).

High rates of expenditure growth have made Medicare a prime target for budget savings, and rapid increases in spending on physician services have made that portion of Medicare a particular target.[1] During the late 1980s Part B expenditures, of which 73 percent are for physician services, grew more than three times faster than Part A expenditures (Figure 1-4)(CRS 1989). Part B outlays nearly doubled between 1985 and 1990, growing about 40 percent faster than the economy as a whole (Figure 1-5)(Board of Trustees 1990). The relative contributions of price and volume to this growth changed during the 1980s, however (Figure 1-6).

Financial Protection and Access to Care for Beneficiaries Medicare, along with Social Security and private pension benefits, plays a major role in ensuring the elderly's financial security. This financial protection has been weakened, however, by continued expenditure growth that has raised out-of-pocket spending. Increases in beneficiary costs--including Part B monthly premiums, deductibles, copayments, and liabilities for balance bills--have outpaced increases in Social Security benefits (Figure 1-7). These come on top of other substantial out-of-pocket expenses borne by older Americans, including Part A deductibles and coinsurance, premiums for supplemental insurance, and expenses for services not covered by Medicare such as prescription drugs, eyeglasses, and long-term care (Table 1-1).

BUILDING BLOCKS OF PAYMENT REFORM: POLICY CHANGES

During the 1980s, the Congress passed a series of policies that incrementally moved physician payment in the direction of the OBRA89 reforms. These reforms addressed three problems: the lack of a rational basis for payment, escalating program costs, and concerns about beneficiary financial protection and access to care.

Creating a More Rational Pattern of Relative Payment

Congress began realigning the pattern of relative payments with the passage of the Consolidated Omnibus Budget Reconciliation Act of 1985. This legislation directed the development of a resource-based relative value scale and created the Commission to advise the Congress on payment reforms. About this time, the Health Care Financing Administration (HCFA) issued proposed rules using the concept of inherent reasonableness to reduce payment for cataract surgery and anesthesia during cataract surgery. Before the regulatory process was completed, the Congress reduced payments for these services in legislation (OBRA86) to achieve budget savings. This marked the first time that the budget process was used to move relative fees towards resource-based payments. In OBRA87, the Congress moved further in this direction by slating payment reductions for 12 groups of overvalued procedures. Additional cuts in overvalued procedures were included in OBRA89 and OBRA90.

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[1] Medicare is divided into two parts that pay for different services and are financed by different sources. Part A, the Hospital Insurance program, provides inpatient hospital coverage, limited home care, and skilled nursing benefits. Part B, the Supplementary Medical Insurance (SMI) program, covers the cost of physician services, clinical laboratory tests, durable medical equipment, and outpatient hospital care. Part A is financed primarily by payroll taxes while Part B is funded through general revenues and monthly premiums paid by enrollees.

The identification of overvalued procedures was used to realign payments while the Congress awaited the completion of a relative value scale based on the resources, including physician work and practice expense, involved in providing a service. In its 1989 report, the Commission recommended replacing the CPR system with a Medicare Fee Schedule based on such a scale. The Congress adopted this recommendation in OBRA89, mandating that the transition to the fee schedule begin in 1992.

Controlling Expenditure Growth

Signs of rapid growth in Part B expenditures were apparent as early as 1972, when the Congress limited increases in prevailing charges to increases in the Medicare Economic Index (MEI).[2] Despite this constraint, Part B payments per enrollee continued to grow by 17 percent annually from 1975 to 1982, more than twice the general rate of inflation (CBO 1986).

Following this initial effort to limit increases in Medicare spending on physician services, physician payments were essentially untouched until 1984, when the Congress imposed a fee freeze. This freeze lasted from July 1984 to April 1986 for all physicians and was extended until January 1987 for physicians opting not to join the Participating Physician and Supplier (PAR) program.[3] Research on whether the fee freeze actually slowed expenditure growth has been inconclusive. Some evidence suggests that physicians increased volume substantially during the freeze period (Mitchell 1989), but this increase may reflect the continuation of previous trends rather than a response to the freeze.

The Commission has long held that a direct measure to contain the volume of services is necessary to constrain expenditure growth over the long term. Toward this end, it recommended a plan for national expenditure targets, linking fee updates to progress in slowing expenditure increases, to serve as a collective incentive for physicians. OBRA89 followed this concept by requiring that an annual performance standard for volume growth be set that can be compared with the actual rate of growth in determining fee updates.

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[2] Annual MEI increases in the MEI are based on increases in physician practice costs and in general earnings levels.

[3] As discussed below, physicians joining the PAR program agree to accept assignment on all claims.

Policy Changes to Protect Beneficiaries

The 1984-1986 fee freeze provided beneficiaries with some relief from rising costs but the PAR program brought more substantial protection. Physicians signing participation agreements accept the Medicare charge as payment in full on all claims, forgoing the opportunity to bill patients any additional amount. In return, they are listed in a directory available to beneficiaries, receive expedited claims processing, and--during the fee freeze--were permitted to raise charges. This created a payment differential between participating and nonparticipating physicians that was made permanent in 1986 and expanded slightly in 1987. Prevailing charges for participating physicians are now 5 percent higher than those of nonparticipants. This differential will continue under the Medicare Fee Schedule.

Assignment rates increased dramatically, climbing from 51.5 percent to 84.8 percent during the 1980s. Much of the increase appears to be attributable to the creation and growth of the PAR program. More than 44 percent of physicians have signed participation agreements; services provided by participating physicians now account for 55 percent of total Medicare spending on physician services. But these changes have not affected beneficiaries uniformly because assignment and participation rates vary across states, specialties, and individual physicians (Tables 1-2 and 1-3).

Since 1986 the amount physicians can bill in excess of the Medicare approved charge has been constrained by maximum allowable actual charge (MAAC) limits. MAACs were intended only to be a transitional solution to controlling balance bills, however. When the Commission recommended limiting charges for unassigned claims to a fixed percentage of the Medicare Fee Schedule amount, the Congress readily adopted this recommendation, replacing MAACs with a simpler and more stringent limitation on balance billing. These charge limits will be phased in three steps beginning in January 1991 (Table 1-4). OBRA89 provided additional relief to beneficiaries by requiring that physicians submit all Medicare claims effective September 1990.

LOOKING AHEAD TO A NEW SYSTEM OF PHYSICIAN PAYMENT

As January 1992 approaches, anticipation about the effects of payment reform on physicians and beneficiaries continues to grow. Implementation of some provisions, such as Volume Performance Standards and charge limits, is already under way. Others, most notably the Medicare Fee Schedule, will be implemented more gradually.

Some have expressed concern that policy changes made since the passage of OBRA89, particularly spending cuts included in OBRA90, threaten the goals of payment reform. The Commission continues to believe, however, that the OBRA89 reforms hold great promise for making payment more rational and equitable, keeping growth in volume and expenditures to more reasonable rates, and providing financial protection to beneficiaries.

Simulation Results

In earlier reports, the Commission presented simulation results describing the effects of payment reform on individual fees, geographic areas, physician specialties, and balance bills. These results, based on relative values from Phase I of the resource-based relative value study by William Hsiao and his colleagues at Harvard University, are briefly presented here.

Effects on Payments for Selected Procedures. The Medicare Fee Schedule will substantially increase payments for some services and substantially reduce payments for others. Allowed charges for primary care services will increase 30 percent under the fee schedule. By contrast, payments for major surgical procedures (such as coronary artery bypass and total hip replacement) will decrease considerably (34 and 23 percent, respectively). Decreases are also anticipated for diagnostic procedures; payments for cardiovascular stress tests, for instance, will be 39 percent less under the fee schedule.

Effects on Physicians by Specialty. The effects of the fee schedule will differ across physician specialties. These differences reflect variations in service mix (for example, primary care specialties provide substantially more evaluation and management (EM) services than surgical specialties).

Physicians who provide primarily evaluation and management services can expect considerable increases in total payments under the fee schedule. For example, internists and family practitioners are estimated to receive increases of 14 and 37 percent. Overall, medical specialties will increase by 20 percent. Surgical specialties, on average, can anticipate a 11 percent decrease under the fee schedule. Decreases will be greatest for thoracic surgery (25 percent) and ophthalmology (18 percent). Surgical specialties, like otolaryngology, which provide more EM services will actually receive an increase (6 percent).

Effects on Physicians by Geographic Area. The Medicare Fee Schedule includes a geographic adjustment factor (GAF) so that fees in different geographic areas will vary with differences in input costs. Implementing the fee schedule will redistribute Medicare payments from metropolitan to rural areas. The reduction in payments to physicians in all metropolitan areas combined, however, will be small (4 to 5 percent) compared with the increase to physicians practicing in rural areas (12 to 13 percent). In most geographic areas, payments to medical specialties will increase, while payments to surgical specialties will decrease.[4]

Effects on Beneficiaries. When fully phased in, the OBRA89 charge limits will substantially reduce balance bills for most beneficiaries. In the aggregate, balance bills are expected to be reduced by more than 75 percent. Fully 68 percent of beneficiaries will see reductions in cost sharing (balance bills plus coinsurance).

The Commission is working on new simulations that reflect the broader range of surveyed physician work values from Phase II of the Hsiao study. Preliminary results, however, show puzzling changes between Phase I and Phase II. Because Professor Hsiao has stated that the relative values released in Phase II are not final, the Commission will be in communication with his team and with HCFA to better understand its simulation results. It plans to release new simulations with recommendations on refinements in the scale of relative work later this year.

Implementing the Medicare Fee Schedule

The simulation results describe payment changes under a fully implemented Medicare Fee Schedule. The first step in the five-year transition to payment under the fee schedule begins January 1, 1992 (Table 1-5). To meet this deadline, the Health Care Financing Administration made a number of tentative policy and technical decisions early on that were released in its Model Fee Schedule in September 1990. The Model Fee Schedule also raised a number of other important policy issues and options affecting implementation. HCFA plans to issue a Notice of Proposed Rulemaking in April 1991, with intent of issuing final regulations in October 1991. The agency is also working with carriers to gear up for the January 1, 1992, deadline by standardizing coding policies, developing historical payment amounts to be used in calculating blended payments, and implementing uniform edit packages.

The first year of the transition is particularly significant because many fees (29 percent of services) will move directly to the fee schedule amount. If OBRA89 and OBRA90 provisions are seen as the beginning of the transition, 52 percent of the total change in payment rates and nearly 70 percent of the increase in payments for evaluation and management services will occur by 1992 (Table 1-6). In fact, 20 percent of the total change in payment rates has already been achieved. After 1992, the pace of change will slow, with the rest of the adjustment spread evenly over four years. In 1996 all payments will be based on the full fee schedule amount.

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[4] This effect results from the combination of geographic adjustments in payment to reflect variation in input prices and the fact that rural physicians provide relatively more EM services than urban physicians.

The extent of the change slated for the first year raises questions about the length of the transition period. The Commission originally recommended a three-year transition. This was lengthened under OBRA89 in response to concerns that a rapid transition would be disruptive to physicians, particularly those whose payments are expected to fall under the Medicare Fee Schedule, and to beneficiaries if their ability to obtain care is abruptly impaired. As 1992 approaches, however, some now contend that a five-year transition unnecessarily prolongs uncertainty about the fee schedule's effects on practice revenues and access to care. Carriers have also commented that a quicker transition would be simpler and less costly to administer.

Some have also raised concerns that recent congressional efforts to reduce the budget deficit undermine payment reform, arguing that cuts in overvalued procedures and other services reduce the size of the Medicare "pie" that will be redistributed under a payment system based on resource costs. In particular, many are concerned that while payment for EM services will increase relative to other services, the absolute gain may be small. This is because reductions in fees from OBRA87, OBRA89, and OBRA90 will result in a lower conversion factor. Starting with 1988 as a base, these provisions have had the effect of reducing fees by 15 percent in real (inflation-adjusted) terms.[5] Thus, while relative payment for EM services will increase by 29 percent, the real increase will be about 10 percent since 1988.[6] This increase could be even smaller by 1996 as a result of how the budget neutrality provision of OBRA89 was drafted (see Chapter 6).

Implementing a System of Volume Performance Standards

In contrast to the long phase-in for the Medicare Fee Schedule, implementation of the Volume Performance Standard (VPS) provisions of OBRA89 began with enactment. OBRA89 specified both a performance standard rate of increase for fiscal year 1990 (9.1 percent) and a process for setting the standard in future years.[7] Under this process, both the Secretary and the Commission recommend a VPS rate of increase to the Congress each spring. Recommendations must take into account several factors including growth and aging of the beneficiary population, inflation, appropriateness of care, access to care, and changes in technology.

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[5] This analysis reflects fee changes from OBRA87 that took effect in 1989 and all fee changes from OBRA89 and OBRA90. The last includes the 0.4 percent reduction in the 1992 update and the provision on payment for electrocardiograms (see Chapter 13). It does not reflect the forthcoming decision on the 1992 update to be made as part of the VPS process. This reduction is roughly equivalent to the rate of inflation as measured by the MEI. Thus, in nominal terms, fee levels in 1992 will be similar to what they were in 1988.

[6] The 29 percent relative increase for EM services comes from the Commission's simulations of Phase I of the Hsiao study. These relative values may change after Phase II, Phase III and the Commission's refinement process are completed.

[7] The FY 1990 figure was reached by summing the factors in the default formula and subtracting 0.5 percent as specified in the law. Although estimates of incurred expenditures for FY 1990 have not been released, figures for the first six months of the fiscal year suggest that expenditure growth exceeded the VPS by at least two percentage points.

Once it receives these recommendations, the Congress may either set the VPS itself or allow the VPS to be set by a default formula that combines beneficiary growth, inflation, and a five-year average of past volume growth less a predetermined performance standard (1.0 percent for 1991, 1.5 percent for 1992, and 2.0 percent thereafter).

For FY 1991, the Secretary and the Commission recommended VPS rates of increase and, as required by the legislation, specified separate rates of increase for surgical and nonsurgical services (Table 1-7). The Secretary's recommendation started from expected growth in fees and the beneficiary population and then added the effects of legislative changes (for example, coverage of screening mammography). Because private sector volume growth appeared to be roughly half that for Medicare, the Secretary included half the trend rate of Medicare volume growth. This resulted in a VPS of 8.7 percent for surgical services, 10.5 percent for nonsurgical services, or 9.9 percent overall. Legislative changes accounted for the entire difference between the surgical and nonsurgical VPSs.

The Commission took a different approach in developing its recommendations by starting with the Medicare actuary's best projection of outlay growth for FY 1991 and subtracting two percentage points. Noting that surgical volume had been growing more slowly than nonsurgical volume in recent years, the Commission recommended a one percentage point larger difference between the surgical and nonsurgical VPSs. This led to a VPS recommendation of 9.3 percent for surgical services, 12.1 percent for nonsurgical services, and 11.2 percent overall. This recommendation reflects the Commission's view that, within five years, outlays for physicians' services should grow no faster than nominal gross national product.

In OBRA90, the Congress adopted the Commission's approach by directing HCFA to set the performance standard at the baseline minus two percentage points. Because of the substantial price cuts under OBRA90, the final performance standard was much lower than that recommended by either the Commission or the Secretary (Table 1-7).[8] Thus OBRA90 set the performance standard at 7.3 percent for all physician services, 3.3 percent for surgical services and 8.6 percent for nonsurgical services.

The process of setting the annual VPS will begin again in April with the Secretary's recommendation. The Commission must report its advice to the Congress on both the update and the VPS for 1992 by May 15.

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[8] The baseline used in calculating the final performance standard was higher than that used by the Commission. Because this baseline was estimated six months later, it reflects more recent data.

A few generalizations can be made about the initial experiences in setting VPSs. First, neither the Secretary nor the Commission has found good estimates of the appropriateness, access, and technology factors that should enter into the VPS recommendation. This suggests that there will be differences of opinion about the performance standard. Second, the Congress took an active role in setting the VPS instead of relying on the default formula. Finally, the difference between the Commission's recommendation and the final standard was due largely to the incorporation of the effects of OBRA90 budget cuts. If the Congress enacts budget legislation in the fall in the future, such discrepancies will continue.

The trends and policy changes discussed here provide a backdrop for the major legislative changes brought about by OBRA89 and the steps to be taken in its implementation. These trends will continue to shape the new payment system and the changing context for reform. The Commission's analyses and recommendations in this report outline some of the major policy and operational challenges ahead.

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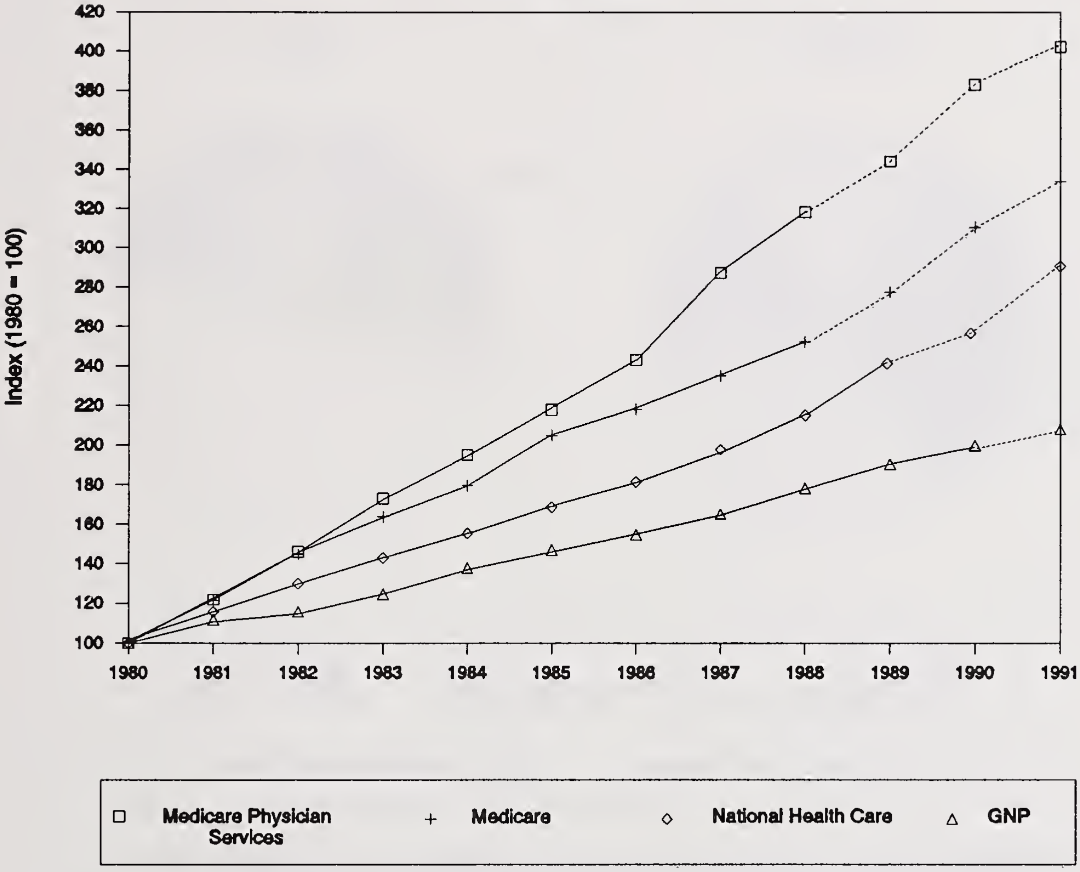
Mitchell, Janet B. and others, "The Medicare Physician Fee Freeze," *Health Affairs* 8(1):21-33, Spring 1989.

Physician Payment Review Commission, *Medicare Volume Performance Standard Rate of Increase for Fiscal Year 1991*, Report to Congress, No. 90-1, May 15, 1990.

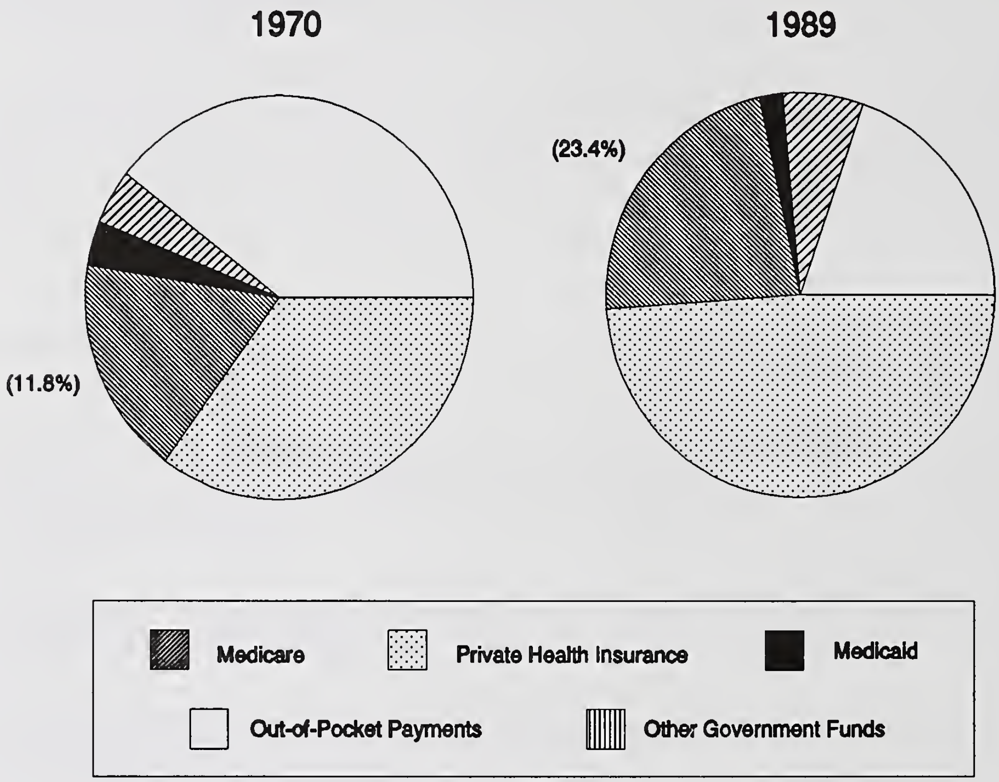
Figure 1-1. Trends in Gross National Product and Expenditures for Medicare, Medicare Physician Services, and National Health Care
1980 - 1991



Sources: Health Care Financing Administration, Office of the Actuary; U.S. Department of Commerce

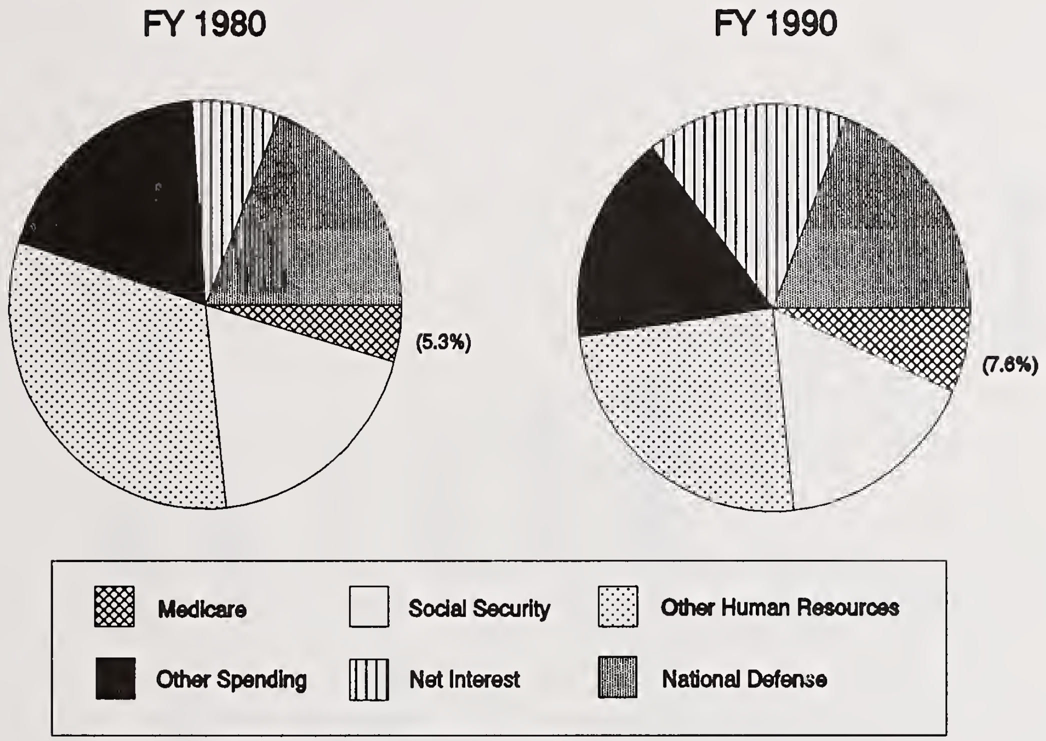
Note: .... represents projections.

Figure 1-2. Expenditures for Physician Services, by Source of Funds



Source: Health Care Financing Administration, Office of National Cost Estimates

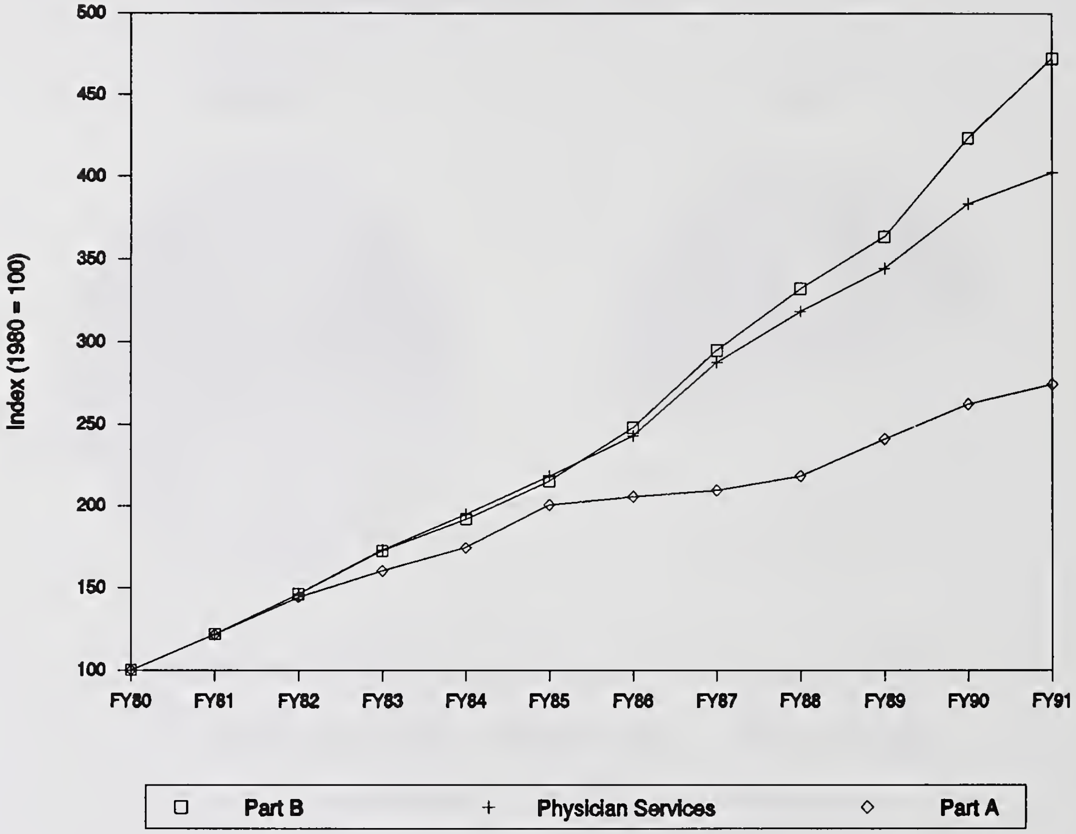
Figure 1-3. Composition of Federal Spending



Source: Budget of the U.S. Government, Fiscal Year 1992

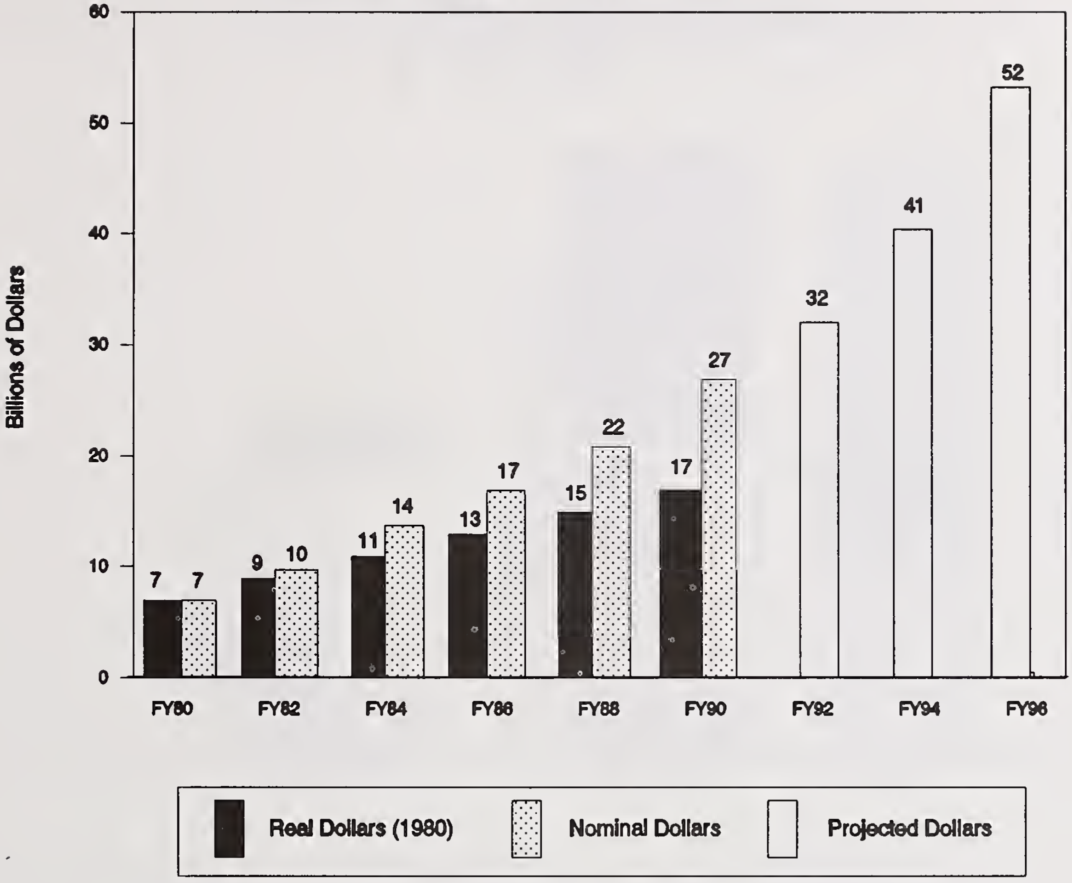
Note: Examples of other human resources are education, income security, and veterans' benefits. Examples of other spending are environment, transportation, agriculture, and energy.

Figure 1-4. Medicare Expenditure Trends, FY 1980 - 1991



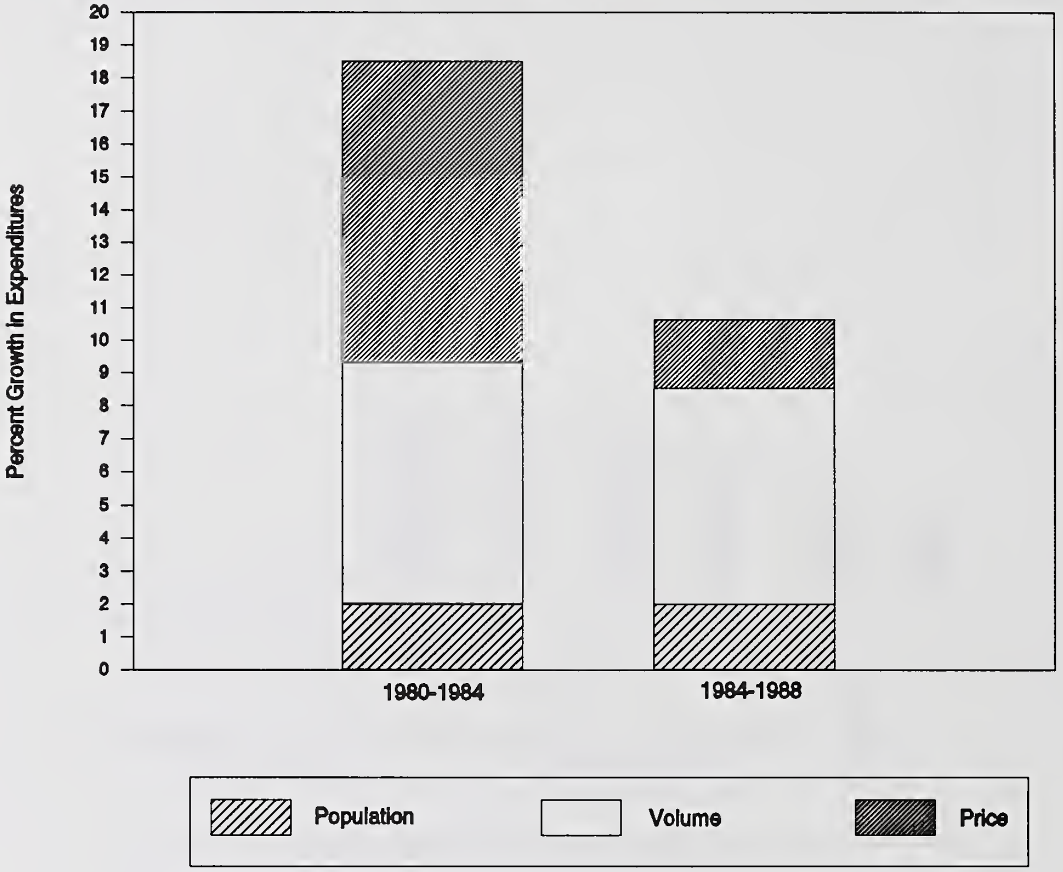
Source: Health Care Financing Administration, Office of the Actuary

Figure 1-5. Medicare Physician Service Expenditures Selected Years, FY 1980 - 1996



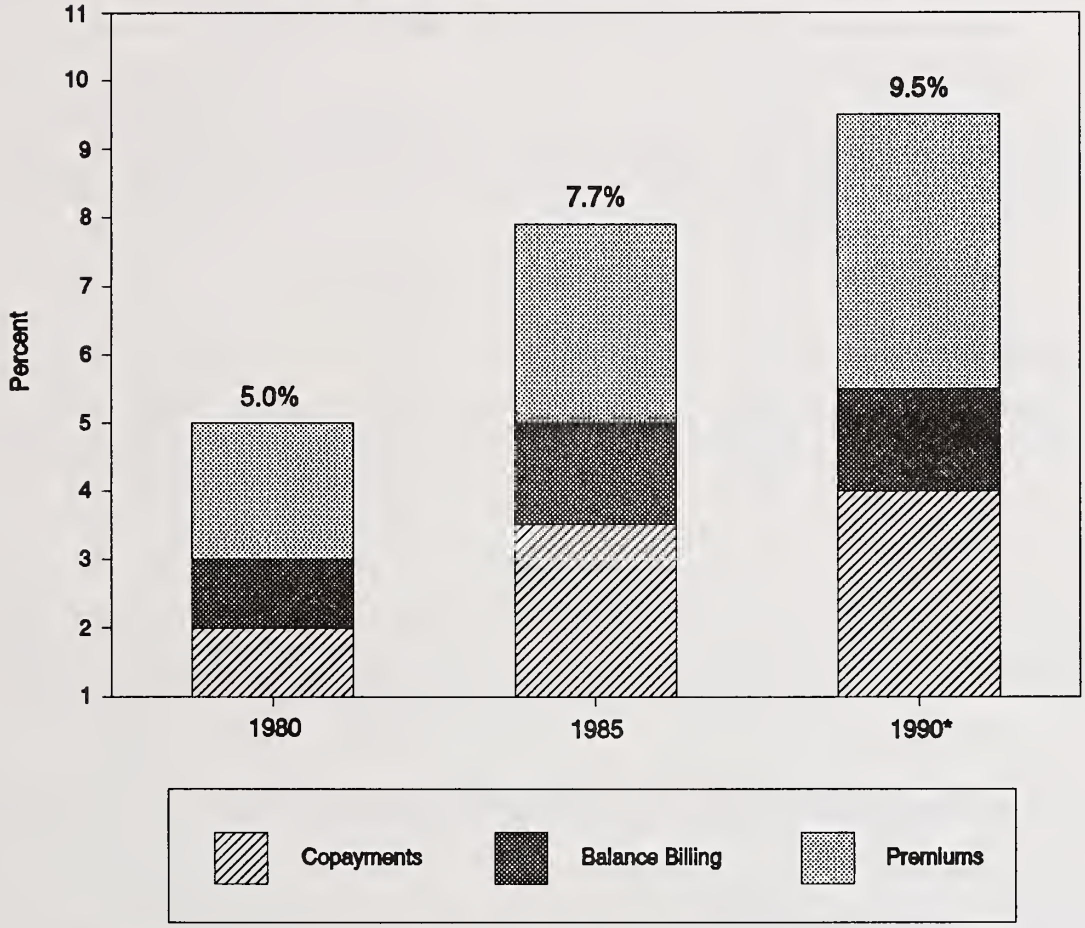
Source: Health Care Financing Administration, Office of Budget Analysis

Figure 1-6. Growth in Medicare Physician Expenditures by Components 1980 - 1988



Source: PPRC, 1990.

Figure 1-7. Annual Beneficiary Part B Liability As a Percentage of Social Security Benefits



Source: Congressional Budget Office; Congressional Research Service

Notes: *Projected

Copayments include coinsurance and deductible. Social Security benefits are for full career worker born 1895-1925 who always earned the average wage.

Table 1-1. Cost Sharing Under Medicare, 1991

	Beneficiary Liability
Medicare Part A	
Hospital deductible	$628 per spell of illness
Hospital coinsurance	
Days 61-90	$157 per day
Days 91 on (for 60 lifetime reserve days)	$314 per day
Skilled nursing facility coinsurance	
Days 21-100	$78.50 per day
Medicare Part B	
Premium	$29.90 per month
Deductible	$100.00 per year
Coinsurance	20% of allowed charge
Balance Bills	All excess up to 125% of the allowed charge, with the exception of evaluation and management services which are limited to the lower of 140% of the allowed charge or the physician's 1990 MAAC percentage.

Table 1-2. Physician Participation Rates for Selected Specialties, 1985-1990

Specialty	10/85- 4/86	5/86- 12/86	1/87- 3/88	4/88- 12/88	1/89- 12/89	4/90
			(Percent of Physicians)			
All Physicians	28.4	28.3	30.6	37.3	40.7	44.1
Cardiovascular Disease	35.6	38.8	43.2	52.8	55.5	60.6
General Surgery	33.9	34.5	37.2	48.5	52.2	55.8
Ophthalmology	27.3	28.7	35.1	46.3	50.5	55.6
Radiology	41.3	39.5	39.8	46.3	49.6	55.6
Orthopedic Surgery	29.0	38.3	32.6	44.0	49.2	53.7
Dermatology	34.0	37.8	38.1	45.7	48.7	53.4
Pathology	39.6	37.7	41.2	48.1	50.6	53.4
Neurology	34.8	33.2	39.2	44.1	49.2	53.1
Urology	27.8	29.0	30.9	41.7	45.6	49.6
Internal Medicine	32.5	31.1	33.6	41.2	45.2	48.8
Obstetrics-Gynecology	29.1	30.5	31.5	40.4	44.2	48.8
Family Practice	25.5	27.1	27.1	35.6	39.7	47.2
Otorhinolaryngology	24.6	25.1	27.0	36.9	41.2	45.2
Psychiatry	30.0	27.8	28.6	34.4	37.8	41.6
General Practice	27.3	23.6	25.6	32.3	35.8	39.7
Anesthesiology	21.1	21.7	20.3	25.0	28.3	30.8

Source: Health Care Financing Administration.

Note: Figures for all physicians include all practitioners defined as physicians under the Medicare statute.

Table 1-3. Assignment Rates by HCFA Region, October 1989-September 1990

Region	Percent of Covered Charges
Boston Region	93.4
New York Region	82.9
Philadelphia Region	88.6
Atlanta Region	84.8
Chicago Region	80.1
Dallas Region	81.4
Kansas City Region	76.6
Denver Region	62.7
San Francisco Region	84.2
Seattle Region	55.2

Source: Health Care Financing Administration, Bureau of Program Operations.

Table 1-4. Implementation of OBRA89 and OBRA90 Charge Limits

1991	Charges for services other than evaluation and management services limited to 125 percent of the allowed charge for nonparticipating physicians (95 percent of the fee schedule amount) or the physicians' 1990 maximum allowable actual charge percentage.
	Charges for evaluation and management services limited to 140 percent of the allowed charge for nonparticipating physicians.
1992	Charges for all services limited to 120 percent of the recognized payment amount for nonparticipating physicians.
1993	Charges for all services limited to 115 percent of the recognized payment amount for nonparticipating physicians.

Table 1-5. Transition to the Medicare Fee Schedule

1992	Payment for services with historical payments within 15 percent of the fee schedule amount paid at the fee schedule amount.
	Payment for services with historical payments below 85 percent of the fee schedule amount paid at the historical rate plus 15 percent of the fee schedule amount.
	Payment for services with historical payments above 115 percent of the fee schedule amount paid at the historical rate less 15 percent of the fee schedule amount.
1993	Payment based on 75 percent of the updated 1992 payment amount and 25 percent of the fee schedule amount.
1994	Payment based on 67 percent of the updated 1993 payment amount and 33 percent of the fee schedule amount.
1995	Payment based on 50 percent of the updated 1994 payment amount and 50 percent of the fee schedule amount.
1996	Payment based on the fee schedule.

Table 1-6. Percent of 1988 to 1996 Change Accomplished by Year

	1991	1992	1993	1994	1995	1996
Specialty Groups						
Medical	19	55	66	77	89	100
Surgical	26	58	68	79	89	100
Other	16	44	58	72	86	100
Types of Services						
Evaluation and Management	16	69	76	84	92	100
Other	21	45	59	72	86	100
All Services	20	52	64	76	88	100

Source: BMADI 1988 aged to 1991.

Table 1-7. Volume Performance Standard Recommendations, Fiscal Year 1991

	All Services	Surgical Services	Non-Surgical Services
		(Percent Growth)	
Secretary of Health and Human Services	9.9	8.7	10.5
Physician Payment Review Commission	11.2	9.3	12.1
Congressional Action			
HCFA baseline less two percentage points	13.0	11.2	13.6
Effects of OBRA90 cuts[a]	-5.7	-7.9	-5.0
Final standard	7.3	3.3	8.6

Note: [a]Estimates include behavioral offset.

CHAPTER 2

REFINING THE SCALE OF RELATIVE WORK

Under the Medicare Fee Schedule, the relative value of each service will be determined by the resource costs (physician work, practice expense, and malpractice expense) involved in providing it. The work component for each service will be set through a scale of relative work based largely on estimates from the resource-based relative value study prepared by William Hsiao and his colleagues at Harvard University (Hsiao study). The first phase of this study, which included 18 specialties, was completed in 1988 (Hsiao and others 1988). The second phase, in which 14 additional specialties were surveyed and seven specialties were resurveyed, was completed in 1990 (Hsiao and others 1990).

The method that the Harvard researchers developed for estimating relative physician work can be summarized in the following steps.

- A model of physician work was developed that divided work into preservice, intraservice, and postservice components.

- Vignettes, describing a typical patient for the service to be provided, were developed for a representative sample of services for each physician specialty. Each vignette was intended to represent the average service for its corresponding *Current Procedural Terminology* (CPT) code.

- A representative national sample of physicians from each specialty was surveyed about the work and time involved in providing each service. For most services, total work was imputed from physicians' estimates of intraservice work and pre- and postservice (pre/post) time.

- After removal of outlier responses, individual physicians' estimates of work were statistically averaged for each vignette in the sample, yielding a scale of work for 20 to 25 services in each specialty.

- The specialty-specific scales of relative work were statistically linked through vignettes considered to be the same or equivalent by two or more specialties. This process aligned the work values for the vignettes of all specialties onto a common scale, assigning one relative work value to each surveyed CPT code.

- Using existing charge relationships within small families of services, the relative work values (RWVs) for the sample of surveyed services were extrapolated to services that were not surveyed, generating a scale of relative work for all physician services.

In 1989, the Commission evaluated the results of Phase I of the Hsiao study and concluded that the basic methodology for estimating physician work was sound (PPRC 1989). The Commission and others, however, identified a number of issues that needed to be resolved before the final scale of relative work could be constructed. Since it was unclear whether data from Phase II would fully address these concerns, additional studies were conducted to complement the Hsiao study. The Commission compiled data that would be helpful in calibrating RWVs for evaluation and management (EM) services and surgical global services. Societies representing cardiothoracic and vascular surgeons contracted with Abt Associates Inc. to resurvey their specialties.

Now that Phase II of the Hsiao study and the other research studies have been completed, the Commission has begun a process to review and refine the scale of relative work for the Medicare Fee Schedule (PPRC 1990). As part of this process, the Commission is analyzing data from Phase II of the Hsiao study and comparing it with data from other sources. It is also obtaining input from specialty societies in the following key areas:

- RWVs for services other than EM services that were surveyed directly in Phases I and II of the Hsiao study,
- cross-specialty links in the Hsiao study,
- RWVs for imaging services from the Radiologist Fee Schedule and the Hsiao study,
- methods for assigning RWVs to EM services, and
- methods for assigning RWVs to surgical global services.

Problems identified in the process are being discussed with the Harvard researchers along with analysts from the Health Care Financing Administration (HCFA) and the American Medical Association (AMA). On some issues, the Commission will also seek advice from an interspecialty panel of physicians that it is convening. The Commission will make recommendations for refinements in the areas listed above available to the Congress and HCFA by June 1991, before the final regulations for implementing the Medicare Fee Schedule are completed.

The Commission had initially planned to evaluate RWVs developed through extrapolation in Phase II of the Hsiao study as part of its refinement process. However, in Phase III of the Hsiao study (which is currently under way) the Harvard researchers are using a different approach--a small-group process--to assign RWVs to services that were not included as vignettes in the Phase I/II national surveys. The Commission has decided to delay the final step of its refinement process until the Phase III study is completed. At that time, it will evaluate the Phase III methodology and ask specialty societies to compare RWVs developed through the small-group process with those developed through extrapolation.

This chapter describes the progress the Commission has made to date in evaluating Phase II of the Hsiao study.[1] It begins by discussing improvements in the Phase II study that address concerns the Commission and others raised about Phase I. It then focuses on four areas in which refinements may be needed. The RWVs for EM services that Hsiao and his colleagues submitted to HCFA may need to be revised because they appear to understate the value of shorter visits, overstate the value of longer visits, and mask differences in effort (work per unit of time) between different types of visits. Estimates of pre- and postservice time for surgical global services may also need to be refined. Phase II estimates are substantially higher than those obtained in other studies. In the area of cross-specialty links, additional work may be needed to improve the linking process for some of the insular specialties. Questions also remain about the reliability of the linking process in general. Finally, adjustments will likely be necessary to apply the Hsiao study scale of relative work to the Medicare population. The analysis presented in Phase II does not appear to be adequate to support the researchers' conclusion that the age of the patient has no substantial effect on relative physician work.

IMPROVEMENTS IN THE PHASE II STUDY

Phase II of the Hsiao study made substantial improvements in subspecialty representation, response rates, and specification of time periods and vignettes. Issues related to the position of the standard vignette and fitness-to-rate were addressed in Phase II but not completely resolved. Nonetheless, remaining problems in these areas should affect, at most, only a small proportion of services and can be dealt with in the context of the Commission's refinement process.

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[1] Allen Dobson, Ph.D., vice president of Lewin/ICF, Inc.; Susan Marquis, Ph.D., senior economist at the RAND Corporation; and Monica Noether, Ph.D., vice president of Abt Associates Inc., worked with the Commission on the Hsiao study evaluation.

Surveyed Specialties

Phase II broadened the range of surveyed specialties. Eighteen specialties were surveyed in Phase I. In Phase II, 14 additional specialties were surveyed and seven specialties were resurveyed. In some resurveyed specialties, such as ophthalmology and psychiatry, separate instruments were used to survey services performed primarily by subspecialists.

Response Rates

Specialty response rates improved, increasing from an average of 63 percent in Phase I to 72 percent in Phase II. Vignette response rates also improved. In Phase I, only 29 percent of vignettes had response rates of 60 percent or better. This condition was satisfied for 79 percent of vignettes in Phase II.

Specification of Time Periods and Vignettes

Pre-, intra- and postservice periods were better defined for some types of services (such as laboratory and imaging services). Vignettes were better specified in terms of site of service and exclusion of services performed by someone other than the physician. For example, physicians responding to nuclear medicine vignettes were instructed to consider only the work they do, not the work performed by technicians and other professionals.

The proportion of vignettes describing elderly patients doubled. In Phase I, 8 percent of vignettes (18 percent of age-specified vignettes) involved patients 65 years of age and older. In Phase II, these proportions were 16 percent and 39 percent, respectively.

Position of Standard Vignettes

Proportionally fewer specialties had standard vignettes that were not in the mid-range of work. In Phase I, nine of 18 specialties had standards that deviated 10 percent or more from the log mid-point of work for their surveyed vignettes. In Phase II, this was true for only six of 21 specialties. For all affected specialties, the standard was in the low range of work.

After reviewing Phase I data, some specialty societies were concerned that a low-range standard could distort estimates at the upper end of the scale of relative work. A comparison of work values for vignettes in orthopedic surgery, which was surveyed with a standard that was in the middle range of work in Phase I and in the low range of work in Phase II, suggests that this may not be a problem. In this specialty, the position of the standard did not consistently affect work values or influence standard errors for vignettes at the lower, middle, or upper ranges of work.

Fitness-to-Rate

Physicians in Phase II, in contrast to those in Phase I, were asked how often they had performed the services described in certain vignettes in the last year. This information was not used to exclude any responses, however. The Commission's analysis suggests that for 96 percent of the vignettes that were surveyed about fitness-to-rate, exclusion of nonperformers would result in less than a 10 percent change in the assigned intraservice work value. But for particular specialties and services, the impact would be greater. For example, intraservice work values for 11 percent of orthopedic surgery vignettes would change by more than 10 percent. Values for individual services would change by as much as 28 percent. Since the fitness-to-rate issue appears to affect only isolated services, it should be possible to make any necessary corrections in RWVs in the context of the Commission's refinement process.

ASSIGNING RELATIVE WORK VALUES TO EM SERVICES

Under the revised EM coding system (see Chapter 8), a total work value will be assigned to each visit code using the typical encounter time in the level of service and the relationship between encounter time and total work for the class of the visit.[2] The assignment of accurate relative total work values to EM services requires accurate information about the relationship between encounter time and total work for each of the classes of visits included in the coding system. If this condition is met, payment will properly reflect:

- differences in work across levels of service within each class (visits of a given type that typically last more or less time),
- differences in the work of each level of service when applied to different classes (visits of a given duration that involve more or less effort), and
- differences in aggregate work between EM and non-EM services.

The pattern of relative work involved in providing visits of different durations and different types appears to be very sensitive to the methodology used to estimate the relationship between encounter time and total work.[3] Relationships based on data from the Hsiao study are very different if they are estimated using individual physician responses rather than mean responses for each EM vignette. Relationships are also different if they are based on estimates of work and time for EM vignettes or for visits provided in actual practice. Data from both the Hsiao study and the Commission's Visit Survey (PPRC 1991a) suggest that physicians responding to EM vignettes may have overestimated the amount of pre/post work involved in actual practice.

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[2] HCFA has not yet made a final decision about the EM coding system that will be used under the Medicare Fee Schedule. However, since all options under consideration incorporate encounter time in the definitions of levels of service, RWVs would be assigned to the new codes using the relationship between encounter time and total work for each class of visit.

The RWVs for EM services that Hsiao and his colleagues submitted to HCFA at the completion of their Phase II study are based on a regression model estimated with mean physician responses for EM vignettes.[4] This method for estimating the relationship between encounter time and total work probably does not have an appreciable net effect on the share of aggregate work assigned to EM services. But it may lead to serious distortions in RWVs across levels of service and classes of visits. The Phase II RWVs appear to understate the value of shorter visits and overstate the value of longer visits. For example, a five-minute established patient office visit may be undervalued by as much as 50 percent, and a 60-minute new patient office visit may be overvalued by as much as 58 percent. Moreover, the Phase II values do not reflect differences in effort (work per unit of time) between classes of visits. For example, although a 45-minute initial consultation may entail 48 percent more work than a 45-minute follow-up consultation, Phase II values for these visits are the same. Since physicians in different specialties do not provide the same mix of visits (for example, some provide primarily short, established patient office visits, while others provide a greater proportion of consultations or longer visits), distortions in RWVs could result in inequitable payment.

This section begins by reviewing the analysis of the relationship between encounter time and total work in Phase I of the Hsiao study. It discusses the limitations of that analysis and describes how Phase II and the Commission's Visit Survey were designed to address them. The section continues with an analysis of data from Phase II of the Hsiao study and the Visit Survey, focusing on why the pattern of work for EM services is sensitive to analytic methods and the source of data. It concludes by discussing the role of empirical data in the development of a payment structure for visits under the Medicare Fee Schedule. The analysis of the relationship between encounter time and total work in this section is limited to the generic visits that are provided by physicians in most specialties. It is not intended to apply to specialized visits, such as psychiatric, ophthalmologic, emergency, critical care, and preventive care visits.

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[3] In the Hsiao study, visit encounter time is referred to as intraservice time.

[4] These RWVs are presented in Table 9.16 in the Phase II Report (Hsiao and others 1990). As an interim measure (pending final decisions about the revised EM coding system) the researchers assigned encounter times to current CPT visit codes so that they could assign RWVs using the same method that would be used with the new coding system. Thus, the RWVs were based on the encounter time in the level of service and the relationship between encounter time and total work for the class of the visit.

Background

In 1989, the Commission used the results of Phase I of the Hsiao study to perform a preliminary analysis of the relationship between time and work for EM services (PPRC 1989). This analysis was based on individual physician estimates of time and work for EM vignettes rather than on mean values. The Commission used this approach for two reasons. First, the database using individual physician responses was broader, permitting a more thorough examination of the variables that influence the relationship. Second, much of the variation in individual physician responses to vignettes represents actual differences in practice style among physicians.[5] These important differences would be masked with an analysis based on mean values.

The Commission's analysis of Phase I data described a relationship in which the total work per unit of encounter time decreases as visits become longer. This implies that visits involve some degree of fixed work unrelated to the duration of the encounter. The analysis also showed substantial differences in the relationship between total work and encounter time for different classes of visits (for example, between new and established patient visits and between consultative and nonconsultative visits).

These findings seemed intuitively reasonable, but the Commission sought additional data to validate the results because it was concerned about the accuracy of the time and work estimates on which they were based. Physicians in Phase I did not provide consistent estimates of time for EM vignettes. When the surveyed physicians were asked to estimate time for the same EM vignette on two separate occasions, first responses tended to be higher than second responses by 30 percent. In addition, physicians in Phase I of the Hsiao study were not asked to give direct estimates of total work for EM vignettes. Thus, with any analysis of these data, total work values had to be imputed, using limited data about pre- and postservice time and assumptions about pre- and postservice intensity.

Phase II of the Hsiao Study. In Phase II of the Hsiao study, the researchers refined the methods they used to obtain estimates of time and work. Physicians in most Phase II specialties were asked to estimate total time and total work (as well as encounter time and encounter work) directly for a subset of EM vignettes. Consequently, for most classes of visits, it is no longer necessary to impute total work. To validate estimates of pre- and postservice time, physicians in five Phase II specialties were asked to report the amount of time they spend each week performing encounter services and pre/post services for office visits. This information can be compared to the way physicians allocated time for hypothetical EM vignettes.

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[5] The Commission's analysis of Phase I data corrected for measurement error in physicians' estimates of time and used a nonparametric approach to correct for positive correlations in the error term across responses to multiple vignettes by a single physician.

Commission Visit Survey. The Commission's Visit Survey was designed to provide data from actual visits that could be used to validate and refine estimates of time and work for EM vignettes in the Hsiao study. In this survey, 339 physicians in three specialties (internal medicine, rheumatology, and urology) recorded times, estimates of work, and patient/visit characteristics for 19,000 office and hospital visits. Using clipboards with attached digital watches, they recorded start and stop times for all EM services performed on the day of the visit. They also recorded estimates of time for all EM services performed before or after the day of the visit, direct estimates of total work for the visit, and estimates of the proportion of total work performed on the day of the visit. Analyses based on these data provide information about (1) the relationship between encounter time and total work for different classes of visits, (2) the share of total time physicians spend in the encounter and in pre/post activities, and (3) the relative intensity (work per unit of time) of encounter activities and pre/post activities. The Visit Survey analysis is described in detail in the Commission's background paper *Survey of Visits and Consultations* (PPRC 1991a).

The General Relationship Between Encounter Time and Total Work

Analyses of the relationship between encounter time and total work use multiple regression to estimate a model that predicts physicians' estimates of total work from their visit encounter times. The Phase II RWVs that Hsiao and his colleagues submitted to HCFA are based on equations estimated with mean values of encounter time and total work for each EM vignette (Hsiao and others 1990). The researchers also reported the results of performing the analysis another way -- using individual physician response data.[6] RWVs derived from these regressions are presented in Table 2-1.

The relationship between encounter time and total work is very different with the two analytic approaches. The regression using mean values describes a relationship in which the total work per unit of encounter time increases as visits become longer. That is, a 10 percent increase in encounter time results in a greater than 10 percent increase in total work. By contrast, the regression estimated with individual physician responses describes a relationship in which the total work per unit of encounter time decreases as visits become longer. Thus, shorter visits have substantially lower RWVs relative to longer visits when the regression is based on mean values rather than on individual physician responses.[7]

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[6] The analyses using mean values and "demeaned" individual physician response data are described in Appendix M and Chapter 9, respectively, of the Phase II report (Hsiao and others 1990).

[7] The means regression also results in substantially lower RWVs for EM services overall. This difference is discussed later in the chapter.

Table 2-1. Hsiao Study Total Work Values for Visits

	Visit Encounter Time (Minutes)[a]				
Visit Class	**5**	**15**	**30**	**45**	**60**
New Patient Office Visit					
Means Analysis	16	49	105	155	210
Individual Physician Analysis	27	65	112	154	192
Established Patient Office Visit					
Means Analysis	15	49	105	164	225
Individual Physician Analysis	27	66	115	160	202
Initial Hospital Visit					
Means Analysis	27	69	125	165	207
Individual Physician Analysis	61	103	144	175	201
Initial Consultation					
Means Analysis	15	52	113	176	242
Individual Physician Analysis	37	81	132	176	215
Follow-up Consultation					
Means Analysis	15	50	112	174	239
Individual Physician Analysis	32	69	113	150	185

Source: Commission analysis of data from Phase II of the Hsiao Study.

Note: [a]Encounter time is expressed as face-to-face time for all classes of visits.

Aggregation bias (Theil 1971; Malinvaud 1966) may account for the different estimates of the relationship. The estimate based on individual physician responses is the average relationship between encounter time and total work among physicians. By contrast, the estimate based on mean values is a weighted average of this relationship, in which physicians whose estimates of time deviate from the average receive less weight. The two estimates will differ if the relationship between encounter time and total work varies among physicians or if individual estimates of encounter time contain measurement error.

The Commission's analysis of data from Phase I of the Hsiao study demonstrated that these relationships differ even if measurement error is corrected (PPRC 1989). Therefore, the relationship based on mean values appears to be a biased estimate of the average relationship among physicians.

As would be expected then, the regression using individual physician responses more closely describes the relationship between encounter time and total work in actual practice. The regression estimated with data from the Visit Survey, like the Hsiao study's individual physician regression, shows that shorter visits involve more total work per unit of encounter time than longer visits. The question of using mean values or individual physician responses is not relevant in analyzing data from the Visit Survey. In this study, physicians reported the time and work involved in providing *actual visits* rather than estimating time and work for EM *vignettes*. Since each physician provided different visits, each visit was treated as an individual observation.[8]

The regression using individual physician responses also appears to be more consistent with standard notions of clinical practice. One would expect visits to involve certain fixed EM services that are provided regardless of the duration of the visit. For example, all visits probably involve some record review and charting, but these services would not be expected to take up twice as much time for a 30-minute encounter as for a 15-minute encounter. A relationship in which shorter visits involve more total work per unit of encounter time accounts for fixed work. Data from the Visit Survey demonstrate this directly by showing that shorter visits involve proportionally more pre- and post-encounter time than longer visits (Table 2-2).

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[8] Although the Visit Survey contains information about 19,000 visits, these are not all *independent* observations because of substantial positive correlations in the error term across the visits for a single physician. A nonparametric approach similar to a random effects model was used to correct the inference statistics for this positive correlation.

Table 2-2. Ratio of Pre/Post Time to Total Time for Visits with Different Encounter Times

	(Pre/Post Time)/(Total Time) for Visits with Encounter Times of:			
Visit Class	**≤ 10 Min**	**11-20 Min**	**21-40 Min**	**> 40 Min**
New Pt. Office Visit	.21	.17	.17	.16
Established Pt. Office Visit	.18	.16	.16	.12
Initial Hospital Visit	.22	.31	.18	.11
Subsequent Hospital Visit	.16	.15	.13	.12
Initial Consultation	.26	.26	.22	.19
F/U Consultation	.22	.18	.18	.17

Source: Commission Visit Survey (PPRC 1991a).

Analysis of data from the Visit Survey suggests another reason why shorter visits involve more total work per unit of encounter time: they involve substantially more effort than longer visits (Table 2-3). This observation holds if one looks at the total effort (total work/total time) involved in the visit or at the effort expended on the day of the visit (day work/day time). The difference in effort does not appear to be related to differences in the mix of EM services provided. For example, although certain EM services (such as the history, physical examination, and counseling) may be more intense than others, these services do not make up a greater proportion of total time for shorter visits than for longer visits. Thus, the difference in effort appears to reflect differences in the intensity with which physicians provide the same mix of services.

Table 2-3. Variation in Effort With Visit Duration

Visit Class	Mean Work/Time for Visits with Encounter Times of:[a]			
	≤ 10 Min	11-20 Min	21-40 Min	> 40 Min
New Pt. Office Visit				
Day Work/Day Time	10.3	7.4	5.3	3.8
Total Work/Total Time	9.5	6.9	4.9	3.7
Established Pt. Office Visit				
Day Work/Day Time	9.8	5.8	4.1	3.2
Total Work/Total Time	9.0	5.4	3.8	3.1
Initial Hospital Visit				
Day Work/Day Time	7.2	6.8	5.4	3.7
Total Work/Total Time	6.6	5.7	4.9	3.6
Subsequent Hospital Visit				
Day Work/Day Time	8.7	5.9	4.1	3.7
Total Work/Total Time	7.9	5.4	3.9	3.6
Initial Consultation				
Day Work/Day Time	13.9	7.0	5.0	4.1
Total Work/Total Time	12.5	6.4	4.7	4.0
F/U Consultation				
Day Work/Day Time	8.1	6.1	4.4	3.3
Total Work/Total Time	7.5	5.6	4.2	3.1

Source: Commission Visit Survey (PPRC 1991a).

Note: [a] The work values in this table are on the Visit Survey scale of relative work. Thus, the units of effort are not comparable with those reported in the Hsiao study.

While regressions based both on data from the Visit Survey and on individual physician responses from the Hsiao study show that the total work per unit of encounter time decreases as visits get longer, this finding is much more pronounced in the Visit Survey (Table 2-4).[9] The analysis presented below suggests that the difference is due to overestimates of pre/post work for EM vignettes in the Hsiao study.

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[9] In Table 2-4, RWVs from the Visit Survey and the Hsiao study are presented on a common scale in which aggregate EM work reflects the Hsiao study regression on individual physician responses.

Table 2-4. **Comparison of Predicted Total Work: Visit Survey and Hsiao Study Regressions on Individual Responses**[a]

Visit Class	Visit Encounter Time (Minutes)[b]				
	5	15	30	45	60
New Patient Office Visit					
Visit Survey	42	77	114	143	168
Hsiao Study	27	65	112	154	192
Established Patient Office Visit					
Visit Survey	40	63	84	99	112
Hsiao Study	27	66	115	160	202
Initial Hospital Visit					
Visit Survey	38	75	114	146	174
Hsiao Study	48	85	113	144	175
Initial Consultation					
Visit Survey	60	102	142	172	198
Hsiao Study	37	81	132	176	215
Follow-up Consultation					
Visit Survey	39	67	95	117	135
Hsiao Study	32	69	113	150	185

Source: Commission analysis of data from the Visit Survey and Phase II of the Hsiao Study.

Note: [a] In this table, RWVs from the Visit Survey and the Hsiao study are presented on a common scale in which aggregate EM work reflects the Hsiao study regression on individual physician responses. Visit Survey RWVs in Table 2-8 are presented on a scale that adjusts for errors in aggregate EM work.

[b] Hospital encounter times are expressed as floor time.

Data from both the Hsiao study and the Visit Survey suggest that physicians responding to vignettes may have overestimated the share of time they spend in pre/post activities in actual practice (Table 2-5). In Phase II of the Hsiao study, physicians estimated total time and encounter time for EM vignettes and also reported the amount of time they spend each week performing encounter services and pre/post services for office visits. Thus, it is possible to compare how physicians allocate their office visit time each week in practice with the way they estimate allocating their time for hypothetical office visit vignettes. The results are substantially different. Physicians reported spending 20 percent of their office visit time performing pre/post activities in weekly practice, but they estimated that pre/post activities make up 30 percent to 33 percent of total time for EM vignettes. The Phase II weekly practice results agree closely with results from the Visit Survey. Physicians in the latter study reported that pre/post activities make up 17 percent of total time for their office visits.

Data from the Visit Survey suggest that physicians responding to vignettes in the Hsiao study may not only have overestimated pre/post time but also may have overestimated pre/post intensity (Table 2-6). In Phase II of the Hsiao study, physicians estimated that the effort involved in providing EM services before or after the encounter is about the same as the effort involved in providing EM services during the encounter. Results from the Visit Survey, however, suggest that pre/post services are only one-third to one-half as intense as encounter services.[10] The latter finding seems more consistent with the types of EM services physicians provide during the encounter and pre/post periods. The Visit Survey demonstrates that physicians spend most of the encounter performing the history, physical examination, and counseling. By contrast, most pre/post time is spent in activities that would be expected to be less intense, such as scheduling, reviewing records, and contacting other providers.

Differences in the Relationship Across Classes of Visits

Under the new visit coding system, the total work value assigned to each code will be based on the relationship between encounter time and total work for each code's class of visit. Thus, payment per level of service can vary across classes, reflecting differences in the effort (work per unit time) involved in providing different types of visits.

Somewhat surprisingly, the Phase II RWVs that Hsiao and his colleagues submitted to HCFA show few differences in the relationship between encounter time and total work across classes of visits (see the means analysis RWVs in Table 2-1). This finding is not

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[10] In the Visit Survey, the intensity of day and non-day services rather than encounter and pre/post-encounter services was measured. But these different constructs should not affect the conclusions. The data indicate that most pre/post time is non-day time. And while day time includes some pre/post time, most of the time on the day of the visit comprises encounter services. For clarification, it should be pointed out that encounter time is *not* defined as day time in the Visit Survey. Rather, it is defined as face-to-face time for office visits and as floor time for hospital visits.

Table 2-5. Ratio of Pre/Post Time to Total Time

	(Pre/Post Time)/(Total Time)	
Source	Established Patient Office Visits	New Patient Office Visits
Hsiao Study Vignettes	.33	.30
Visit Survey	.17	.17
Hsiao Study Weekly Practice	– .20 –	

Source: Commission analysis of data from the Visit Survey and Phase II of the Hsiao Study.

Table 2-6. Ratio of Encounter Effort to Pre/Post Effort

	(Mean Encounter Effort)/(Mean Pre/Post Effort)	
	Established Patient Office Visit	New Patient Office Visit
Visit Survey[a]	2.9	2.3
Hsiao Study Vignettes	0.9	1.1

Source: Commission analysis of data from the Visit Survey and Phase II of the Hsiao Study.

Note: [a](Day Effort)/(Non-day effort).

consistent with analyses of data from other sources or with physicians' perceptions of clinical practice. The Commission's analyses of data from both Phase I of the Hsiao study and the Visit Survey demonstrate that more total work per unit of encounter time (RWV per level of service) is involved in new patient office visits than established patient office visits, in initial hospital visits than subsequent hospital visits, in initial consultations than follow-up consultations, and in consultations than nonconsultative visits (see the Visit Survey RWVs in Table 2-4).

The members of the Commission/American Medical Association consensus panel on visit coding, which included physicians in 28 specialties, thought that differences in effort between these classes of visits were clinically meaningful (see Chapter 8). For example, they noted that in new patient visits, compared with established patient visits, physicians create a new administrative record, establish a new medical relationship, and evaluate new problem(s). In initial (compared with subsequent) hospital visits, physicians review old hospital records, dictate the admission note, write admission orders, and communicate the treatment plan with nursing and house staff. In consultations, physicians see patients with complex problems that cannot be managed by their primary care physicians. Consultants make greater use of their special training during consultations and expend additional effort reviewing other physicians' findings and communicating with referring physicians.

In part, the Phase II RWVs may show few class differences in the relationship between encounter time and total work because they are derived from regressions based on mean values rather than individual physician responses. Regressions estimated with mean values only show differences in RWVs between consultations and nonconsultative office visits (see the means analysis RWVs in Table 2-1). Regressions estimated with individual physician responses also show differences between initial and follow-up consultations (see the individual physician analysis RWVs in Table 2-1).

Overestimates of pre/post work may account for the fact that neither the regression using mean values nor that using individual physician responses shows differences in RWVs between new and established patient visits. The Commission's analysis of individual physician response data from the Hsiao study shows that *encounter work* per unit of encounter time is greater for new than for established patient office visits. This difference is not seen, however, in the relationship between *total work* and encounter time. The discrepancy would seem to be related to estimates of pre/post work. Data presented in Tables 2-5 and 2-6 suggest that physicians responding to vignettes in the Hsiao study overestimated pre/post time and pre/post intensity to a greater extent for established patient office visits than for new patient office visits. This error could have raised total work values for established patient office visits, masking true differences in effort.

Aggregate Total Work for EM Services

The two methodologic issues discussed above affect not only the relationship between encounter time and total work, but also estimates of aggregate total work for EM services. The assessment at this point, however, is that the degree to which the use of mean values in the regression understates aggregate EM work appears to be roughly equivalent to the degree to which overestimates of pre/post work overstate it.

RWVs for EM services are substantially lower overall if the regression on mean values rather than the regression on individual responses is used to assign RWVs to visits (Table

2-1). The difference in aggregate total work for office visits, consultations, and initial hospital visits between the two scales is 25 percent.[11]

It is not entirely clear why the regression using mean values suggests lower aggregate total work for EM services. One likely (and somewhat paradoxical) explanation could be that the Hsiao study included proportionally more long/complex vignettes for each class of visit than physicians actually provide in practice. This is illustrated in Table 2-7, which compares the distribution of encounter times in the 1985 National Ambulatory Medical Care Survey, the University of Southern California National Study of Medical and Surgical Specialties, the Visit Survey, and the Hsiao study. For each class of visit, the mean time for the Hsiao study vignettes is substantially longer than the mean time recorded in actual practice.

To understand why the mix of EM vignettes may affect aggregate EM work, it is helpful to think of the regressions based on mean responses and individual responses as two intersecting lines. The regression on mean values has a steeper slope than the regression on individual responses.[12] The two regressions intersect at the mean Hsiao encounter time for each class of visit. For visits with shorter encounter times than the Hsiao study mean, the regression on mean values assigns lower total work values than the regression on individual responses. Since the visits physicians provide in actual practice are more frequently shorter than the mean Hsiao encounter time than they are longer, the regression based on mean values produces a lower estimate of aggregate EM work.[13]

While the regression based on mean responses appears to understate aggregate EM work, the apparent overestimates of pre/post time and intensity appear to overstate it. If one assumes that pre/post time makes up 20 percent (rather than 30 percent) of total time and that pre/post services are half as intense (rather than equally intense) as encounter services, this would reduce aggregate EM work estimated with the Hsiao study individual physician response regression by 21 percent. An adjustment based on both factors would lower aggregate EM work in Phase II of the Hsiao study by approximately 1 percent (1.25 x 0.79 = 0.99).

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[11] Subsequent hospital visits are not included in this estimate because this class of visit was not included in the Phase II individual physician response regression. (Physicians in the Hsiao study were surveyed about encounter time [defined as floor time] but not about total work for subsequent hospital visits).

[12] With the regression on mean responses, total work per unit of encounter time increases as visits become longer. With the regression on individual physician responses, the opposite is true.

[13] According to the Harvard researchers, no other adjustments were made to account for the lower aggregate total work in the analysis using mean responses.

Table 2-7. Comparison of Encounter Times Across Surveys

	Percent of Visits with Physician Encounter Time				
Visit Class	**≤10 Min**	**11-20 Min**	**21-40 Min**	**41-50 Min**	**>50 Min**
New Patient Office Visit					
Visit Survey	14	30	36	9	11
NAMCS	27	43	20	5	5
USC	47	33	12	4	4
Hsiao I	1	19	38	15	26
Hsiao II	11	21	30	18	20
Established Patient Office Visit					
Visit Survey	36	44	17	1	1
NAMCS	41	46	11	1	1
USC	60	33	6	1	1
Hsiao I	22	52	21	3	2
Hsiao II	17	49	25	5	4
Initial Hospital Visit					
Visit Survey (floor time)	16	23	33	11	17
Visit Survey (face-to-face time)	37	29	22	8	4
USC	55	25	12	4	5
Hsiao I	1	7	23	15	55
Hsiao II	0	6	27	20	46
Subsequent Hospital Visit					
Visit Survey (floor time)	38	40	18	2	2
Visit Survey (face-to-face time)	70	23	6	1	0
USC	69	25	5	1	1
Hsiao I	46	42	11	0	1
Hsiao II	16	54	24	3	4
Initial Consultation					
Visit Survey	9	28	38	11	13
NAMCS	31	44	19	3	4
USC	34	24	23	9	10
Hsiao I	1	6	33	17	43
Hsiao II	1	10	30	22	38
F/U Consultation					
Visit Survey	37	43	17	1	1
NAMCS	43	43	12	1	1
USC	61	30	7	1	1
Hsiao I	3	58	32	5	2
Hsiao II	18	43	23	6	11

Source: Commission analysis of data from the Visit Survey, the 1985 National Ambulatory Medical Care Survey (NAMCS), the University of Southern California National Study of Medical and Surgical Specialties (USC), and Phases I and II of the Hsiao study.

Approach to Assigning RWVs to EM Services

A sound EM payment policy cannot be developed using empirical data alone. Of the three available options, the regression using mean values for EM vignettes in the Hsiao study would appear to be the least desirable. While this regression (which Hsiao and his colleagues used to assign RWVs to visits) would not appreciably distort overall payment for EM services, it would cause serious distortions in payment across levels of service and classes of visits. Within each class, shorter visits would be substantially underpaid relative to longer visits. Payment per level of service would vary little across classes of visits. Thus, EM payment would not reflect important differences in effort.

The regression estimated with individual physician responses from the Hsiao study would result in less distortion. However, a fee structure based on this regression might also overpay shorter visits relative to longer visits and would not account for differences in effort between new and established patient office visits and between initial and subsequent hospital visits. Unless corrections were made, aggregate payment for EM services under this scale would be too high.

A third approach would be to use data from both the Hsiao study and the Visit Survey to assign aggregate total work to EM services[14] and data from the Visit Survey to distribute total EM work across classes of visits and levels of service. Preliminary RWVs based on this method are presented in Table 2-8.[15] If these RWVs were used to assign fees to visits, aggregate EM work would not change appreciably from what Hsiao and his colleagues submitted to HCFA. Payment per level of service would vary substantially across classes, however, reflecting differences in effort between new and established patient visits, initial and subsequent hospital visits, initial and follow-up consultations, and consultations and nonconsultative visits. Within each class, payment per unit of encounter time would be higher for lower levels of service than for higher levels of service. This differential would be more pronounced than with the Hsiao study regression based on individual physician responses.

With such a system, physicians would receive higher payment if they provided more visits of a particular type in a given amount of encounter time. For example, they would receive higher payment for providing the content of three Level 2 visits in 45 minutes of encounter

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[14] Aggregate EM work would be based on Hsiao's individual physician response analysis corrected for physicians' overestimates of pre/post time and intensity.

[15] These RWVs differ from the Visit Survey RWVs in Table 2-4 because adjustments have been made in aggregate EM work.

Table 2-8. Total Work Values for Visits Based on Visit Survey Regressions [a]

Visit Class	Visit Encounter Time (Minutes)[b] 5 (Level 1)	15 (Level 2)	30 (Level 3)	45 (Level 4)	60 (Level 5)
New Patient Office Visit	33	61	90	113	133
Established Patient Office Visit	32	50	66	78	89
Initial Hospital Visit	30	59	90	115	138
Subsequent Hospital Visit	28	46	64	78	90
Initial Consultation	47	81	112	136	156
Follow-up Consultation	31	53	75	92	107

Source: Commission analysis of data from the Visit Survey and Phase II of the Hsiao Study.

Note: [a] These RWVs differ from the Visit Survey RWVs in Table 2-4 because adjustments have been made in aggregate EM work.

[b] Encounter time is expressed as face-to-face time for outpatient visits and as floor time for inpatient visits.

time than for providing the content of one Level 4 visit.[16] This would reward physicians for providing EM services more efficiently. It would also limit any incentives physicians might have to bill for higher levels of service than indicated by the content provided. However, differences in payment across levels of service might be too severe with the Visit Survey regression. This could compromise access to care for patients with multiple or complex problems or create incentives for physicians to spend too little time providing such patients with medical care.

While the Commission believes that EM payment policy should be based on empirical data, any of the approaches outlined above would require refinements before it would be acceptable to all interested parties. The Commission is planning to distribute its EM analysis and the report of the Visit Survey to specialty societies and groups representing Medicare carriers, private insurers, and patients. Their comments, which will be shared with HCFA, the AMA, and the Harvard researchers, should help point the way to developing a fee structure that will be equitable to physicians in all specialties and that will not compromise patients' access to the EM services they require.

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[16] The difference in revenues for physicians who provide primarily short as opposed to long visits would not be as great as it would appear from the differences in RWVs, however. That is because the larger proportion of pre- and post-encounter time associated with shorter visits limits the number of these visits a physician can provide per day.

ASSIGNING RELATIVE WORK VALUES TO SURGICAL GLOBAL SERVICES

In Phase II of their study, Hsiao and his colleagues sought to assign RWVs to surgical global services that reflect the perioperative hospital and office visits included in the Commission's global service policy. The method the investigators used to obtain this information relied not only on estimates provided by respondents to the national survey but also on estimates from small panels of physicians nominated by specialty societies.

The pre/post times for surgical global services in the Hsiao study are higher than those suggested by other studies. They are 18 percent higher, on average, than pre/post times in the Commission's surgical global service project, and 23 percent higher than pre/post times for cardiothoracic and vascular surgical global services in the Abt survey (Noether and others 1990). The Commission is currently assessing whether differences in pre/post time for surgical global services are also reflected as differences in pre/post work.[17] If so, the Commission will make proposals for refinement later this year, obtaining input from all interested parties before making its final recommendations.

This section briefly reviews the Commission's surgical global service policy, and describes two studies (the Commission's global service project and Phase II of the Hsiao study) that were designed to provide information about the perioperative visits included in it. It then discusses differences in estimates of pre/post time across the studies and discusses the implications of these findings on assigning accurate values to surgical global service pre/post work.

Background

In 1989, with the help of a panel of surgeons and officials of Medicare carriers, the Commission developed a policy specifying which services should be included in the surgical global fee. This policy includes:

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[17] This depends on differences across studies in the intensity of pre/post services.

- all preoperative hospital visits (excluding the consultation) provided by the principal surgeon on the day before and day of surgery,[18]

- all usual and necessary intraoperative services, and

- all institutional and outpatient visits provided by the principal surgeon during the 90 days following the primary operation (unless the visit is for a problem unrelated to the diagnosis for which surgery was performed).

Since the global service definition in Phase I of the Hsiao study did not include office visits, the Commission sought other sources of data that would complement the Hsiao study in assigning pre/post work to surgical global services. In Phase II, the Harvard researchers revised their methodology to obtain information about both the office and hospital visits included in the Commission's policy. The Commission's global service project and the Hsiao study Phase II methodology are described below. A comparison of findings from the two studies follows.

Commission Global Service Project. The Commission's global service project is described in detail in the Commission's background paper *Pre- and Postoperative Visits Associated with Surgical Global Services* (PPRC 1991b).[19] It was designed to provide information about the number and duration of hospital and office visits provided by the principal surgeon to the typical patient undergoing each operation in the Commission's global service timeframe.

As a first step in the project, the Commission developed preliminary visit patterns for 160 operations accounting for more than 50 percent of Medicare surgical expenditures. These patterns were based on information the Commission requested from 14 surgical specialty societies as well as data from various objective sources. The number of hospital visits assigned to each operation was based on four sources of data on length of stay (Medicare Part A files, the National Hospital Discharge Survey, the Commission on Professional and Hospital Activities, and Kaiser Permanente of Northern California) as well as specialty society information about the number of visits typically provided by the principal surgeon per hospital day. The number of office visits assigned to each operation reflected data from the Medicare program (a merged Part A/Part B file), Kaiser Permanente of Northern California, and the Carle Clinic (a large multispecialty group practice in the Midwest). Visit durations were based on information provided by specialty societies, average postoperative office visit durations for each specialty in the National Ambulatory

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[18] For operations performed in ambulatory settings, the policy includes the preoperative visit on the day of surgery.

[19] The Commission contracted with Abt Associates Inc. to conduct this project.

Medical Care Survey, and average hospital visit durations for each specialty in surveys conducted by the American Medical Association.

The second step of the project was a nationwide survey in which 100 actively practicing surgeons in each of 13 specialties reviewed the preliminary visit patterns and suggested refinements based on their professional judgment. The survey results validated the methods that were used to determine the number of hospital visits and the duration of hospital and office visits for each operation. The method for determining the number of office visits was revised, however, adjusting a substantial proportion of preliminary estimates upward.

Phase II of the Hsiao Study. In contrast to the Phase I study, RWVs for surgical global services in Phase II were intended to reflect all hospital and office visits provided by the principal surgeon in the Commission's global service timeframe. Estimates of the time involved in providing pre- and postoperative visits came not only from physicians in the national survey (as was the case for Phase I), but also from small panels of physicians. Physicians in the Phase II national survey provided (1) estimates of the number and duration of pre- and postoperative hospital visits for a subset of operations performed in inpatient settings, and (2) estimates of the number and duration of postoperative office visits (no timeframe was specified) for a subset of operations performed in ambulatory settings. They were not asked to provide information about postoperative office visits for inpatient operations. To supplement the survey data, Hsiao and his colleagues also obtained estimates of pre/post time from small panels of physicians nominated by specialty societies. Twenty-five physicians on a general surgery expert panel estimated the time involved in providing pre- and postoperative hospital and office visits for 32 vignettes. Technical consulting panels (each made up of five or six physicians in a given surgical specialty) estimated postoperative office time for 111 vignettes.

Since estimates of pre/post time were available for only a subset of surveyed surgical global services, the Harvard researchers developed regression models to predict pre/post time for the remainder. Separate models were used to predict pre/post time for operations performed in inpatient and ambulatory settings. Within each setting, separate models were used for preoperative time, postoperative hospital time, and postoperative office time. The regressions were based on estimates of time from physicians included in the Phase I and Phase II national surveys, the general surgery expert panel, and the technical consulting panels. Regressions predicting postoperative hospital time were also based on data on length of stay from the Commission on Professional and Hospital Activities.[20]

Pre/Post Time for Surgical Global Services

Estimates of pre/post time for surgical global services are higher, on average, in Phase II of the Hsiao study than in the Commission's global service project or the Abt survey of cardiothoracic and vascular surgeons. There is considerable variation, however, in comparative estimates across specialties and individual operations. Four possible methodologic problems discussed below could have led to overestimates of pre/post time in the Hsiao study.

Estimates of the time involved in providing pre- and postoperative visits for operations are 18 percent higher, on average, in Phase II of the Hsiao study than in the Commission's global service project (Table 2-9). Comparing the 101 operations that were surveyed in both studies, times in the Hsiao study are 11 percent higher, on average, for preoperative visits; 33 percent higher, on average, for postoperative hospital visits; and 16 percent higher, on average, for postoperative office visits. There is substantial variation in the ratios, however, across specialties and across individual operations within each specialty. For example, unlike the times for other specialties, pre/post times for operations performed by urologists are higher, on average, in the Commission's study than in the Hsiao study. But whereas for one urological operation, total pre/post time is 69 percent higher in the Commission's study, for another it is 37 percent higher in the Hsiao study.

Pre/post times are also higher in the Hsiao study than in the Abt survey (Table 2-10). For the 10 cardiothoracic and vascular operations that were surveyed in both studies, perioperative hospital visit time is 23 percent higher, on average, in the Hsiao study than in the Abt survey.[21] As with the comparison to the Commission's work, Hsiao study times appear to be overstated to a greater extent for postoperative visits than for preoperative visits. Again, the magnitude of the difference varies across individual operations.

There are several reasons why pre/post time may have been overstated in the Hsiao study. First, some questions about pre/post time were ambiguous. For example, physicians in the national survey were not given a timeframe when they were asked to estimate the

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[20] The Harvard researchers adjusted estimates of pre/post time for surgical global services surveyed in the Phase I study to make them compatible with those surveyed in Phase II. Estimates of pre- and postoperative hospital time from the Phase I national survey were used when available. Phase II regressions were used to assign pre- and postoperative hospital time to services that were not surveyed for these values in Phase I. Phase II regressions were used to assign postoperative office visit time to all Phase I surgical global services.

[21] In the Abt survey, surgeons were not asked to provide estimates of postoperative office visit time for surgical global services.

Table 2-9. Pre/Post Time in the PPRC Global Service Project and Hsiao Study

		Ratio of PPRC Time to Hsiao Time			
Specialty	**N[a]**	**Pre-op Visit(s) (SD)**	**Post-op Hospital Visits (SD)**	**Post-op Office Visits (SD)**	**All Visits (SD)**
Dermatology	6	1.44[b] (.46)	N/A	.77 (.16)	1.02 (.24)
General Surgery	20	.99 (.43)	1.01 (.54)	.86 (.50)	.96 (.34)
Neurosurgery	9	.77 (.28)	.79 (.18)	.74 (.10)	.76 (.16)
Obstetrics & Gynecology	4	.54 (.06)	.62 (.16)	1.16 (.35)	.69 (.08)
Ophthalmology	14	.67 (.45)	.69 (.44)	1.23 (.35)	.97 (.33)
Oral and Maxillofacial Surgery	5	.51 (.21)	.59 (.04)	.88 (.24)	.64 (.05)
Orthopedic Surgery	18	1.02 (.29)	.67 (.33)	.63 (.22)	.73 (.11)
Otolaryngology	4	.80 (.17)	1.00 (.26)	1.03 (.86)	.91 (.24)
Plastic Surgery	9	.89 (.34)	.26 (.42)	.64 (.19)	.55 (.21)
Thoracic and Vascular Surgery	7	.81 (.25)	.95 (.19)	.69 (.49)	.90 (.14)
Urology	5	1.15 (.51)	1.60 (.57)	1.16 (.46)	1.31 (.36)
All Specialties	**101**	**.90 (.42)**	**.75 (.51)**	**.86 (.44)**	**.85 (.30)**

Source: PPRC Global Service Project and Phase II of the Hsiao Study.

Note: [a] Number of operations in each specialty that were surveyed in both the PPRC Surgical Global Service Project and the Hsiao Study.

[b] This ratio applies to the sum of preoperative and immediate postoperative time.

Table 2-10. Pre/Post Time in the Abt Cardiothoracic and Vascular Surgery Survey and Hsiao Study

Surgical Global Service (CPT Code)	Ratio of Abt Time to Hsiao Time[a] Preoperative Hospital Visit(s)	Postoperative Hospital Visits	All Hospital Visits
32020	0.94	0.81	0.84
32480	0.78	0.70	0.71
33207	0.85	0.91	0.89
33405	0.87	0.71	0.74
33512	0.89	0.77	0.80
33681	0.89	0.70	0.74
34201	1.14	0.93	0.98
35081	0.83	0.58	0.63
35301	0.93	0.97	0.95
39400	0.76	0.90	0.85
MEAN	.89	.80	.81

Source: Abt Cardiothoracic and Vascular Surgery Survey and Phase II of the Hsiao Study.

Note: [a] Ratios of geometric means for each CPT code.

number of postoperative office visits they provide for particular operations. Second, as the Harvard researchers noted in their report, some of the regressions used to predict pre/post time had poor predictive power. Predictive errors were 14 percent for preoperative time, 17 percent for postoperative hospital time, and 28 percent for postoperative office time. Third, physicians responding to hypothetical vignettes may have overestimated the pre/post time they provide in actual practice. This appears to have been the case for EM vignettes, as was described in the section above.

The final reason relates to the use of small panels of physicians nominated by specialty societies. The data suggest that such panels (either because of their size or the types of physicians included in them) may give less accurate and reliable estimates of pre/post time than physicians in a nationwide survey. In the Hsiao study, panel estimates of pre/post time tended to have higher standard errors than national survey estimates. Estimates of pre/post time were higher from panels with fewer physicians than from panels with more physicians. For example, estimates by the general surgery technical consulting panel were 25 percent higher, on average, than estimates by the same specialty's expert panel. These results are not surprising. Physicians on the Hsiao study panels were similar in number and type to the specialty society representatives that provided the Commission with visit patterns. In the Commission's global service project, the patterns provided by specialty societies frequently involved more time than those suggested by the nationwide survey of physicians. To some extent, this variation may reflect differences between ideal and actual practice.

Pre/Post Work for Surgical Global Services

The Commission is currently assessing whether differences across studies in pre/post time are also reflected as differences in pre/post work. Such differences may suggest the need for refinements in the aggregate work of surgical global services relative to other types of services or in the work relation across individual surgical global services.

Although pre/post time for surgical global services is lower, on average, in the Commission's study than in Phase II of the Hsiao study, this may not be the case if one compares pre/post work. The Commission is currently assigning pre/post work values to the 160 operations that were included in its survey by assigning a RWV to each visit (using the visit RWVs in Table 2-8) and then summing the RWVs for each operation's perioperative visits.[22] Most perioperative visits tend to be short (predominantly Levels 2 and 3) and the RWVs assigned to short visits in Table 8 are substantially higher than those assigned in Phase II of the Hsiao study. If differences in intensity balance differences in time, values for surgical global service pre/post work may be similar, on average, in the two studies even though pre/post times are not similar. Differences may persist, however, in pre/post work for individual operations. If so, this would suggest the need for refinements in RWVs for particular surgical global services.

When the Commission's analysis is completed, a paper describing the Commission's global service project and its proposed method for assigning pre/post work to surgical global services will be distributed to specialty societies and other interested parties. Input from these groups will play an important role in shaping the Commission's final recommendations for refinement in this area.

CROSS-SPECIALTY LINKAGE

The Commission has just begun its analysis of the Phase II cross-specialty linking process. While some problems identified in the Phase I study have been corrected, there still may be problems with linkages for insular specialties and there are still unresolved questions about the reliability of the linking methodology in general. As part of its refinement process, the Commission is reviewing comments about RWVs and links from all specialty societies. If RWVs for services performed by certain specialties appear to be out of alignment, further work in this area may be indicated.

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[22] Pre/post work will also include the relative work of scrub/wait time.

Hsiao and his colleagues substantially modified the method for linking specialties in their Phase II study. Some of the changes successfully addressed criticisms with the Phase I study. For example, Phase II links were weighted by variance and by residuals. Thus, a link received a lower weight if physicians were not in good agreement about the amount of work required to perform the service or if that particular link was not consistent with other links for that specialty. While this change is an improvement, other changes may not have strengthened the linking process. For example, Phase II links were not based only on intraservice work, as was the case in Phase I. Instead, some links were also based on total work, intraservice work and total work, or intensity (work per unit of time). The assumptions underlying some of these links are questionable. For example, the intensity link assumes a linear relationship between work and time for EM services, which (as discussed in the EM section above) does not appear to be justified.

In the Phase I study, certain specialties were difficult to link because few services they provide are like those provided by other types of specialties. This may still be a problem in Phase II. The Commission is currently developing criteria to identify specialties that may have problems with links. For example, a specialty may have been poorly linked if it has (1) a high standard error of alignment, (2) few links, (3) few specialties to which it is linked, (4) a high proportion of links based on intensity or on intraservice work and total work, (5) a high proportion of links that differ substantially in terms of work, or (6) a high proportion of linking vignettes with low response rates. Thus far, the Commission has identified six specialties that meet three or more of these criteria: nuclear medicine, pathology (Phase II), radiation oncology, anesthesia, emergency medicine, and oral/maxillofacial surgery. It plans to discuss with the Harvard researchers whether further work could improve links for these specialties.

To assess the reliability of links, the Harvard researchers ran the cross-linking algorithm for nine Phase II specialties using links identified by three panels: one drawn from members of the technical consulting panels, and the others comprised of salaried physicians working in teaching settings in Texas and Massachusetts, respectively. Although the results for the Texas and Massachusetts panels are similar, they differ from those of the technical consulting panel (see Table 5.10 in the Phase II report). In general, standards for surgical and invasive medical specialties have higher positions and the standards for primary care and noninvasive medical specialties have lower positions with the Texas and Massachusetts panels than with the technical consulting panel.

The standards for some specialties differ substantially, especially those with fewer links identified by the technical consulting panel. These results raise questions about the reliability of the cross-specialty alignment. Different types of physicians may choose different links, and the alignment may be sensitive to the effect of one or a few discrepant links when a specialty has only a small number of links.[23]

The Commission is continuing its analysis of the Phase II alignment methodology and is obtaining comments from specialty societies about their RWVs and links. In making recommendations for refinement in this area, the Commission recognizes the strong subjective element in the linking process and the lack of any "gold standard" to indicate that a particular cross-specialty alignment is correct. Thus, while some additional empirical work may be indicated (for example, convening new panels to identify additional links for insular specialties), the final goal should be refining the scale of relative work to make it acceptable to all specialties.

APPLYING THE SCALE OF RELATIVE WORK TO THE MEDICARE POPULATION

In the Hsiao study, each RWV is intended to reflect the relative amount of work involved in providing a service to the typical patient who receives it in the general population. The Medicare Fee Schedule, however, will apply to a more selective population: patients who are 65 years of age or older or who are eligible for Medicare on the basis of disability. If the work relationship among services differs for this population, a scale of relative work based on the typical patient would not be an accurate basis for Medicare payment.

In the Phase II report, Hsiao and his colleagues concluded that there is no substantial difference in the amount of work involved in treating patients of different ages. They based this conclusion on similar work and time estimates for three EM vignettes in which the description of the nature of the illness is the same but the age of the patient varies.[24] While the analysis suggests that age per se may not have a substantial effect on the work or time involved in established patient office visits, it provides no information about whether comorbidity or impairment (which are more common among the elderly) would have affected these estimates. Moreover, it provides no information about whether age, comorbidity, or impairment affect the work involved in providing other classes of visits or services other than visits (such as procedures and surgical global services).

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[23] The specialty standard positions reported in the cross-specialty reliability analysis differ greatly from those in the final Phase II scale. The Harvard researchers informed the Commission that this was due to a calculation error in Table 5.10 of the Phase II report. A corrected version of this table is now available.

[24] The vignettes included (1) a follow-up office visit for a stable 80- or 50-year-old female with metastatic breast cancer; (2) a follow-up office visit for a 45- or 70-year-old diabetic hypertensive patient with a recent change in insulin requirement; and (3) a follow-up office visit for a 27- or 67-year-old male with a right above-the-knee amputation who is having physical discomfort due to his prosthesis.

In its 1990 report (PPRC 1990), the Commission outlined a workplan for addressing this issue, focusing on three categories of services: visits, surgical global services, and nonoperative procedures. The analysis regarding EM services is now completed, and the results played a central role in the Commission's EM coding recommendations. To study the effect of age and impairment on the work and time involved in visits, the Commission drew on data from the Visit Survey (PPRC 1991a), which included 8,500 visits with elderly patients (of which 4,000 were with patients 75 years of age and older), and 2,000 visits with patients with cognitive/physical impairment.[25] The findings indicate that neither age nor impairment substantially affect the relationship between encounter time and total work for visits. In other words, visits with elderly or impaired patients do not appear to involve more effort (work per unit of time) or proportionally more pre/post work than visits with younger, unimpaired patients. In some cases, however, these variables affect the duration of visits. For example, new patient visits with impaired patients are twice as long, on average, as new patient office visits with unimpaired patients.

The Commission's model EM coding system (see Chapter 8) would provide accurate and equitable payment for visits with elderly and impaired patients. The coding system does not incorporate a separate class of code for visits with these patients, since the effort involved in caring for them is not different. But it does permit higher payment for visits that involve more time. In cases where patients have significant comorbidity, visits may be longer because the content is different: medical decisionmaking is more complex and the history and physical examination is more extensive. Such visits would be coded using higher levels of service. In cases where patients have significant cognitive or physical impairment, it may take longer to provide the content of a given level of service. Such visits would be coded using the special patient characteristics/needs modifier.

While the Commission has not yet completed its study of the effect of age on the time and work involved in surgical global services, it has made substantial progress in this area. As part of its surgical global service project (PPRC 1991b), the Commission compared length of stay and the number of postoperative office visits for elderly and all-age populations undergoing the same operations. Data from two sources were used in this analysis: Kaiser Permanente of Northern California (109 operations) and the Commission on Professional and Hospital Activities (CPHA) (242 operations). The results indicate that length of stay is 14 percent (Kaiser) to 21 percent (CPHA) longer, on average, for elderly patients than for the all-age population. The Kaiser data suggest no difference, on average, in the number of postoperative office visits. The ratios for both length of stay and the number of office visits vary considerably across individual operations, however. This reflects, in part, the proportion of elderly patients undergoing each operation in the general population. Since these differences affect the work relationship among surgical global services, they will be important to consider in developing a Medicare adjuster.

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[25] Overall, the Visit Survey included data about 19,000 visits.

The Commission is planning to continue working in this area. To complete its work on the Medicare adjuster, the Commission will need to determine whether intraservice work is different when certain surgical global services are performed on elderly and all-age populations. It will also need to obtain information about age-related differences in intraservice work and pre/post work for nonoperative technical procedures (such as endoscopy or angioplasty).

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CHAPTER 3

PRACTICE EXPENSE

The Omnibus Budget Reconciliation Act of 1989 (OBRA89) describes a method of calculating the practice expense component of the Medicare Fee Schedule. Under this method, the practice expense payment for a service would be based on the historical allowed charge and survey data about the share of physician revenue allocated to practice expenses, rather than on the costs of resources used to provide the service. The Commission has developed a method of calculating the practice expense component that more accurately reflects the costs of resources used to deliver each service. This method is more consistent with the goals of payment reform and would be more equitable to practitioners.

RECOMMENDATION

The Commission continues to support basing the practice expense component of the relative value scale on estimates of resources rather than on historical charges as specified in OBRA89. It has developed and tested the feasibility of a resource-based method and will refine it on the basis of extensive discussion with interested parties and additional analysis.

This chapter has three sections. The first provides a brief overview of the OBRA89 method. The second section describes the Commission's resource-based method of determining practice expense relative values, including an illustration of the method with three services and an extensive discussion of the key elements of the method. Efforts to determine the feasibility of this approach using data from clinics are described in the third section. The chapter concludes with a description of the Commission's ongoing work.

PRACTICE EXPENSE RELATIVE VALUES UNDER OBRA89

Under OBRA89, the practice expense payment for a service is calculated as the product of its historical allowed charge and its practice expense percentage, which is a volume-weighted average of the practice expense shares of specialists who perform the service. Data on practice expense shares would be obtained from national survey data. For example, two services performed only by physicians in a single specialty would have practice expense shares equal to the practice expense share for that specialty.[1] The share would be multiplied by the historical allowed charge of each service to determine the service's practice expense relative value.

In this example, the difference in the practice expense relative values is determined solely by the difference in historical allowed charges for the two services, since they have the same practice expense share. However, the resource-based principle demands that payment levels reflect relative differences in resource use. If historical allowed charges are not correlated with resource use, the resulting practice expense relative values will not accurately measure resource costs. Under the OBRA89 method, no information about actual resources is required since practice expense relative values are computed from data on historical allowed charges, practice expense shares by specialty, and the percentage of each service performed by each specialty.

There are several reasons why this approach is inequitable to physicians (PPRC 1990; Hsiao and others 1990). The amount they are paid for a given service is influenced by historical charge levels and practice expense shares of other physicians who perform this service, rather than by resource costs of the service.[2] Because historical charge levels cannot be explained by input costs, they are unlikely to lead to accurate payment for these costs. Even if charge levels did accurately reflect practice expenses, the use of specialty-specific practice expense shares may result in payments that are not resource-based. For example, payment for a procedure that requires expensive medical supplies will not reflect the service's costs if it is typically performed by specialists with relatively low practice expense shares. Conversely, payment for a service that requires relatively few nonphysician resources will be too high if the service is typically performed by specialists with high practice expense shares. Both elements of the OBRA89 method reflect the current charge-based system and do not incorporate any information about the resources actually used to provide a service.

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[1] The practice expense share as defined in the OBRA89 legislation is the fraction of revenue that is used to pay for practice expenses by the average physician, net of expenses on malpractice insurance. Under the legislation, the "average" physician usually refers to the average physician of each specialty.

[2] In addition to this general weakness of the OBRA89 method, some specific issues have been raised about the computation of technical fees in the Medicare Fee Schedule. In particular, some have criticized the practice expense relative values for some radiology services, which are based on the radiology fee schedule. Because most radiology services are hospital-based, some physicians, including nuclear medicine radiologists and radiation oncologists, claim that the technical component was not carefully developed and therefore understates expenses for non-hospital services.

RESOURCE-BASED PRACTICE EXPENSE RELATIVE VALUES

The Commission supports basing practice expense relative values on estimates of resources used, rather than historical charges and the share of revenues that are devoted to practice expenses. The resource-based method the Commission has developed would base payments on the direct costs incurred in delivering each service and indirect costs assigned in proportion to resource use.

Description of the Resource-Based Method

As described in the Commission's 1990 report to Congress (PPRC 1990), the resource-based method can be framed using basic accounting principles. In particular, practice expenses can be divided into two distinct categories, direct and indirect costs.

Direct costs can be attributed directly to the provision of specific services. For purposes of determining practice expense relative values, direct costs include the costs of all nonphysician labor (such as registered nurses, physician assistants, and receptionists); medical supplies; and medical equipment. Labor, supply, and equipment costs typically vary by service, depending on the amounts and unit costs of required inputs. Some direct costs do not vary across services, but are the same for each service. For example, the combined labor and supply costs of completing the paperwork associated with patient billing is a constant direct cost that can be assigned on a per service basis.

Indirect costs--sometimes referred to as common or overhead costs--are those that cannot be easily traced to particular services but must be assigned using explicit accounting methods. Indirect costs include the costs of management and occupancy, such as the costs of rent, utilities, and the fixed costs of computer hardware for billing. A feature of the resource-based approach developed here is that indirect costs need not be measured at the service level; rather, they are allocated with regard to resource use (physician work and, perhaps, other direct inputs). This allocation method simplifies the data collection process and eliminates the need to standardize for differences in cost allocation conventions used by medical practices that provide cost data.

In its 1990 annual report to Congress, the Commission argued that the method of assigning indirect costs should be "incentive-neutral" (PPRC 1990). The incentive-neutrality principle means that the method of assigning indirect costs should not introduce financial incentives that favor certain services or sites of service. The Commission supports a site-neutral method of assigning indirect costs. Under the resource-based method, indirect costs are assigned regardless of the site of service. Because indirect costs are those associated with maintaining an office and are incurred by physicians regardless of the share of patients they serve in their offices, their allocation should not vary with service site. Physicians' decisions could be influenced if indirect costs were covered differently for different sites, which would violate the incentive-neutrality principle.

The calculation of practice expense relative values under this method is straightforward. A pool of practice expense dollars can be created by multiplying total physician payments in the base year by the national average practice expense share. This pool is divided into two smaller pools of direct and indirect costs, again on the basis of national practice expense share data. Data on direct costs and service volume are used to calculate direct cost relative values; the indirect cost relative values are created from the relative values for work or other direct inputs. Direct and indirect relative values are then combined to give total practice expense relative values.

The Resource-Based Method: An Example

In this section, an example of a three-service health care system illustrates the resource-based method. Key aspects of the method are discussed in detail after the example.

Direct Costs. The direct costs for three services provided in both office and non-office sites are calculated from clinic data (Table 3-1).[3] The numbers of minutes of nonphysician labor have been converted to 1989 dollars by multiplying nonphysician hours by the national average hourly wage paid to nonphysician office employees ($10.88).[4] Service B requires the least nonphysician labor ($5.17), whereas service A is the most labor intensive ($10.70). Medical supplies include any materials that are used up or dispensed when the service is provided, such as bandages, medications, and other disposable items. Services A and B have similar supply costs. The unit cost of the equipment used to provide each service was calculated by amortizing the equipment price over five years at 12 percent interest and dividing the annual cost by the number of all services provided with the equipment during the year. The unit cost of equipment used to provide service A is $3.36; the equipment cost for service C is $19.26.

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[3] Office services include services provided at any site where a facility payment is not received for the service, such as visits to extended care facilities and home visits that are not associated with home health agency care.

[4] The Bureau of Labor Statistics reports that the national average wage paid to nonphysician office employees in 1989 was $9.07. This was inflated by 20 percent (to $10.88) to include the value of fringe benefits paid to office employees. The sensitivity of results to changes in wage and fringe benefit rates will be examined by Commission staff.

Costs are reported separately by site of service. Labor, supply, and equipment costs are zero for non-office services because the physician does not incur these costs when the service is provided in non-office sites. These direct costs are covered by facility payments (either Part A or Part B). Some direct costs, however, are incurred for non-office services. "Constant Direct Costs" represent costs incurred by the physician each time he or she provides a service, regardless of site. In this case, the cost of $1.11 reflects the nonphysician labor and office supplies that are used in billing and in office record keeping activities for each service. These activities are performed regardless of site, and costs are assumed to be fixed per service.

Table 3-1. Direct Cost Calculations

	Nonphysician Minutes	Labor Costs	Supply Costs	Equipment Costs	Constant Direct Costs	Total Direct Costs
Service A						
Office	59.0	$10.70	$4.52	$3.36	$1.11	$19.69
Non-office	0	0	0	0	1.11	1.11
Service B						
Office	28.5	5.17	4.72	7.51	1.11	18.51
Non-office	0	0	0	0	1.11	1.11
Service C						
Office	54.0	9.79	3.93	19.26	1.11	34.09
Non-office	0	0	0	0	1.11	1.11

Source: Commission analysis of its group practice data.

Total direct costs--the sum of labor, supply, equipment, and constant direct costs--are used to calculate direct cost relative values (Table 3-2). The pool of practice expense dollars is the sum of total practice expense dollars for all services, as determined by the OBRA89 method. This represents the share of total physician payment that is for practice expenses. This pool can be divided into direct and indirect pools using survey data.[5] The pool of direct dollars is then allocated in proportion to total direct costs for each of the three services. The direct cost relative value of service A is 11.38 when it is provided in the office and 0.68 when provided in other sites.

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[5] These data indicate that 52.6 percent of practice expenses are direct costs, and 47.4 percent are indirect costs for the average practice (Paxton 1989).

Table 3-2. Resource-Based Practice Expense Relative Values

	Direct RV	Indirect RV[a]	Total Practice Expense RV
Service A			
Office	11.38	10.52	21.90
Non-office	0.68	10.52	11.20
Service B			
Office	10.70	13.24	23.94
Non-office	0.68	13.24	13.92
Service C			
Office	19.69	27.98	47.67
Non-office	0.68	27.98	28.66

Notes: [a] Based on relative values of physician work for services A, B, and C.

Estimation and Assignment of Indirect Costs. Indirect costs include the costs of occupancy (such as mortgage payments, the cost of utilities, and depreciation of nonmedical equipment) and the cost of managing a practice. Because indirect costs are to be assigned to services based on physician work, a service's indirect cost relative value is the relative work value of the service. The indirect cost relative value of service A is 10.52; the indirect cost relative values of services B and C are 13.24 and 27.98, respectively (Table 3-2). Service B requires 26 percent more work than service A and therefore will be assigned 26 percent more indirect costs.

Total Practice Expense Relative Values. The total practice expense relative values are greater for each service when provided in the office because direct costs are incurred by the physician for office services (Table 3-2). Direct costs are incurred by the hospital or outpatient department when the service is provided in those settings.

The final step is to calculate the total payment of the service. A service's payment is the sum of practice expense relative values and relative values for work and professional liability insurance (PLI) from the Health Care Financing Administration's (HCFA) Model Fee Schedule (Federal Register 1990) (Table 3-3).[6] As previously noted, the practice expense amount under the resource-based method is never greater when the service is provided in a non-office setting than when the service is provided in the office. Because the PLI and physician work components of the payment are the same at all sites, the total payment for an office service is never less than the payment for the same service provided at a non-office site.

Table 3-3. Calculation of Fees from Resource-Based Practice Expense Relative Values

	---OBRA[a]--- Relative Values		-Resource-Based- Practice Expense Relative Value	-Resource-Based-[b] Total Payment (1988 dollars)
	Work	PLI		
Service A				
Office	25.5	1.0	21.9	$48.40
Non-office	25.5	1.0	11.2	37.70
Service B				
Office	32.1	2.4	23.9	58.40
Non-office	32.1	2.4	13.9	48.40
Service C				
Office	67.9	6.6	47.7	122.20
Non-office	67.9	6.6	28.7	103.16

Notes: [a] From the HCFA's Model Fee Schedule. Site-of-service differences were not reported in the Model Fee Schedule documentation.

[b] The average prices of services A, B, and C (all sites) are $47.90, $56.80, and $115.30, respectively.

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[6] In this example, the relative values can be summed because each has the same conversion factor of 1.0.

Key Elements of the Resource-Based Method

In addition to estimates of direct costs, estimation of resource use depends on three key elements: the method of allocating indirect costs, the incorporation of a site-of-service differential, and the volume assumptions used to value equipment. Relative values are sensitive to these elements, which are discussed in turn.

Allocation of Indirect Costs. Several bases for assigning indirect costs have been considered. There has been general support for the use of physician time as measured in the resource-based relative value scale study (Hsiao and others 1990) as the basis for assignment of indirect costs. This is consistent with incentive-neutrality, since it means that each minute of care a physician provides will generate the same overhead payment, regardless of site of service.

While using time as the basis for allocation is appealing to the Commission, practical problems are significant. Time estimates are available only for a limited number of services. Commission staff have experimented with estimation of time values for other services, but the time-work relationship is not well defined within the families that were used to extrapolate work values from Phase I of the Hsiao study. Therefore, the Commission prefers the use of physician work as the basis for allocating indirect costs at this time. Physician work is incentive-neutral with respect to work rather than time.

Alternative bases of allocation merit additional examination. For example, indirect costs could be allocated in relation to the costs of all direct inputs--the costs of physician work and nonphysician time, plus the cost of medical equipment and medical supplies. The conceptual basis of this approach is that the use of more nonphysician staff is accompanied by an increased need for management and that equipment requires office space.[7] Different bases could also be used for different types of indirect costs. The indirect cost pool could be divided into two pools using survey data on practice expenses (such as in Paxton 1989). One pool would be for occupancy costs; the second would be for all other indirect costs. The occupancy cost pool could be allocated across services with regard to one basis (such as physician work), while the other pool is allocated with regard to another basis (such as direct costs). This approach would be appropriate if the various pools of indirect costs are clearly related to different components of direct costs.

Differences in Payment by Site of Service. Currently, most site-of-service differentials under the Medicare program reflect coding practices. For example, office visits and hospital visits are reported using different service codes. Codes for radiology services include modifiers to allow for differentiation between a global service and professional interpretation only.

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[7] On the other hand, this approach could distort physician incentives. Expensive, small equipment (which does not have space requirements in relation to cost) would become attractive relative to inexpensive, large equipment. To the extent that different pieces of equipment may have different space and maintenance costs, it may be more appropriate to refine the direct cost measurement to account for these costs, rather than try to incorporate them into indirect costs.

Medicare legislation currently allows for differences in payments by site for other services, but there has been little direction about when and to what extent such differences would be appropriate. Some carriers use different payments for certain services. For example, the legislation that specified that facility fees were to be paid to ambulatory surgical care centers (the Omnibus Budget Reconciliation Act of 1980) gave the Secretary of Health and Human Services authority to pay physicians a facility fee for surgery performed in the office. Facility fees, however, have not been used for office procedures for two reasons. First, the legislation included Professional Standards Review Organization review as a condition for payment of the facility fee for in-office surgical services, but this review has never occurred. Second, data to support calculation of appropriate site differentials have not been available.

HCFA also acknowledged the role of site differences in a resource-based payment system in its Model Fee Schedule (Federal Register 1990). While the practice expense relative values presented in the Model Fee Schedule do not include site-of-service differentials, there is a lengthy discussion of options for incorporating such differentials into the Medicare Fee Schedule. The method proposed by the Commission is similar to one of those.

Recent policy changes indicate that HCFA is already moving to create site-of-service differentials. The agency recently issued a list of 282 services that carriers can target for lower payment if delivered outside of a physician's office. Carriers may reduce the reasonable charge by 40 percent when a listed service is provided away from the office. This fixed-percentage reduction is arbitrary. Resource-based estimates indicate that direct costs exhibit considerable variation by service, suggesting that the payment reduction should vary by service.

Site differentials are appropriate from a strictly resource-based accounting perspective. A physician is clearly responsible for more resources when providing care in his or her office. When an alternative facility is used, fees are paid to the facility to reflect the costs the facility bears (Table 3-4). This suggests that use of a single payment regardless of site leads to one of two outcomes: (1) either the fee does not adequately cover the costs incurred when providing the service in the office, in which case there may be strong incentives to use other facilities even if the service can be more efficiently provided in the office; or (2) the fee does adequately cover the direct costs incurred in the office. In the latter case, Medicare is paying twice by paying both the facility fee and the entire physician payment for services provided away from the office. Under the resource-based method, physician payments would be greater for services provided in offices than in other settings, but there would be no difference in payments net of expenses. The payment differential would cover the difference in actual costs that physicians incur when the service is provided in the office. This differential would ensure that physicians receive the same payment, net of practice expenses, for the same work.

Although the case for site differentials is compelling, there are quality control implications. Currently, use of a facility for surgery subjects physicians to review via the privilege process, Human Tissue Committees, and by other means. This oversight could be lost if physicians performed more surgery in the office because there were no longer any financial barriers. However, this concern may be better handled with guidelines and/or restrictions on performing certain surgeries in the office instead of relying solely on payment distortions to act as a deterrent.

Table 3-4. Medicare Facility Payment by Site of Service

Site of Service	Items Covered
Hospital Inpatient	The payment rate for an inpatient stay is designed to cover operating costs for routine, ancillary and special care unit services, along with facility malpractice costs. The facility payment for an inpatient service does not cover overtime, capital, direct-medical education or kidney acquisition expenditures, which are covered by other Part A payments.
Hospital Outpatient	Covers the overhead costs of the facility and the nonphysician costs (the technical component) associated with the outpatient visit, including radiology, surgery, and lab tests. Physician payment for services delivered in an OPD is lower than payment for services delivered in an office. The charge limit is 60 percent of the prevailing charge for similar services provided in an office setting.
Ambulatory Surgery Center	Covers the overhead costs and costs associated with specific surgical procedures. The facility charge does not include laboratory, x-ray or diagnostic procedures as part of the payment rate. Facility charge is paid only for a limited list of procedures.
Skilled Nursing Facility	Covers the overhead and capital costs. The facility charge does not include ancillary services, physician services, or medications.
Extended Care Facility*	No facility charges are covered.
Physician Office*	No facility charges are covered.

*Under the resource-based method, the office-based fee would apply to care provided in these sites, as well as to home care that is not provided through a Home Health Agency.

The combination of site-neutrality with regard to payment for indirect costs and payment for direct costs incurred in the office ensures that the delivery of care is driven by decisions about medical appropriateness and not payment. In its Model Fee Schedule, HCFA discusses the use of a site differential as means of influencing physicians' decisions to provide care in a particular setting. The differential implied by the resource-based method, however, is site-neutral and reflects only the difference in costs incurred. In the above example, incentive neutrality was maintained because all services had indirect costs allocated in the same fashion, regardless of site. The difference in payments at different sites simply reflects the difference in direct costs at those sites.

Service Volumes for Calculating Equipment Costs. Unit costs of equipment may be very sensitive to assumptions about service volume. The volume used to calculate unit cost can affect the investment decisions of health care providers. This may, in turn, affect beneficiaries' access to care. Use of an above-average volume to calculate unit cost may make it difficult for some physicians to recover their equipment costs. Conversely, use of a below-average volume will overcompensate many physicians for their equipment and may give physicians incentives to overutilize existing equipment or to purchase equipment that will not be used efficiently.

Policymakers can affect the way in which services are delivered by changing the volume used to calculate equipment cost. For example, service X is an important diagnostic test that is typically provided by primary care physicians. It requires relatively inexpensive medical equipment that is available in a typical office. By contrast, service Y is typically provided by one specialty, usually upon referral from a primary care physician. Service Y is rarely provided in the office and requires expensive, specialized equipment. To the extent that service X is considered an important part of primary care and involves inexpensive equipment, the equipment should be valued using a volume level that will ensure that primary care physicians can continue to provide the service. Conversely, if the equipment for service Y is so expensive that it can only be efficiently used at high volumes, from a policy perspective it is appropriate to use a relatively higher volume for the cost calculation. This would ensure that the service is provided only in settings where the equipment can be used efficiently.

The use of efficient volumes for some types of services and average volumes for others is similar to the approach adopted in West Germany (described in Appendix D). Unit costs for equipment in a typical physician's office are based on lower levels of utilization than more specialized equipment. The objectives are to ensure that primary care physicians can provide basic services and that expenditures for specialized services are contained.

The Commission supports the use of a volume level that leads to efficient use of equipment, as it did in its report on mammography services (PPRC 1989). But the Commission also recognizes that it may not be possible for certain physicians to provide services at "efficient volume" levels. For example, the efficient volume level for a service may be too high for practitioners in remote locations. If rural practitioners cannot afford to have the equipment in their practices and other health care providers nearby also do not have such equipment, beneficiaries may be forced to travel long distances for basic care. Therefore, acknowledging that some rural practitioners must use equipment at inefficient volume levels if access is to be ensured, the Commission supports the use of an additional payment for services when unit equipment cost estimates jeopardize access to basic care.

DEMONSTRATION OF THE METHOD WITH DATA FROM CLINICS

The Commission has collected data from a few multispecialty clinics in different parts of the nation to determine the feasibility of the resource-based method for calculating practice expense relative values. These data have been used to generate practice expense relative values for selected services that account for a significant number of Medicare dollars.[8] This section first describes the clinic data and then discusses some of the implications of the resource-based method as shown in estimates for a few specific services. The subsequent section describes the Commission's remaining work, which will culminate in reports issued later in 1991.

Clinic Data and Practice Expense Relative Values

To determine the feasibility of basing practice expense relative values on the resource-based method, data were collected from three large multispecialty clinics. Managers and caregivers itemized the nonphysician labor, medical supplies, and medical equipment used to provide a variety of services within each specialty department. Accounting personnel combined these data with input prices to determine the unit costs of the inputs. These costs where then summed for each service to get the total direct cost of providing the service. In cases where several departments each provide the same service, the volume-weighted average of the costs across departments was used as the service's direct cost.

Because the goal is to determine the relative use of nonphysician labor, medical supplies, and medical equipment in providing the services, this exercise is somewhat insulated from characteristics of the clinics that supplied the data. Some have argued, for example, that these clinics have low unit costs because service volume is high. Even if these multispecialty clinics are able to operate more efficiently than solo practitioners, however, relative resource use within the clinics may still be representative of smaller and single-specialty practices. The only bias that these data may reflect is the relative efficiency of different departments within the clinics. If the clinic is indeed very efficient overall, but one department is inefficient and not well managed, then the relative resource use of services in that department may not be appropriately represented. To the extent that the departments within the clinics are generally homogenous in their operation, however, the relative values of resource use across the studied services should be representative.[9]

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[8] The Commission has also contracted with the Medical Group Management Association to survey practices in 12 specialties for information on the relationship between practice size and service volume. These data will be used to study relationships between volume and unit costs of equipment. (See the discussion on future work.)

In total, the clinics provided four types of data: direct nonphysician and medical supply costs by service, service volumes, equipment used by service, and equipment prices and acquisition dates. The last three items were used to calculate unit equipment costs for each service. The volumes of all services requiring a particular piece of equipment were summed to determine the total service volume for the equipment. This volume was used along with the date of purchase and purchase price to calculate unit costs. Equipment costs were added to the other two costs (nonphysician labor and medical supplies) to determine the total direct cost of the service.

In this demonstration, the resource-based method is compared to the Model Fee Schedule. Practice expense relative values for office services were calculated for 79 services that are included in both the Model Fee Schedule and the Commission's direct cost database. Practice expense relative values were also estimated for all of the services in the Model Fee Schedule when performed at non-office sites. In total, practice expense relative values and payments for 844 unique services--representing a total of 916 service/site-of-service combinations--have been obtained.[10]

The practice expense and payment estimates for a few services illustrate effects of the resource-based method (Table 3-5). One service is provided in inpatient settings only, another is provided only in the office, and several services are provided in both settings. As mentioned earlier, payment for a service that is provided in the office will never be less than payment for the same service in other settings. However, the resource-based office payment is not necessarily higher than the OBRA89 payment, as shown by the kidney stone procedure. The resource-based payment for kidney stone fragmenting is lower in both settings than under OBRA89. This suggests that the service is not as resource-intensive as historical charges would suggest.

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[9] In fact, there is little agreement about the efficiency of these clinics relative to other practice configurations. Many have argued that they are very efficient because there are economies of scale in the provision of medical services, while others argue that they are inefficient because they have relatively more administrative personnel and amenities than other practices. However, there has been no suggestion that efficiency varies widely within each clinic, suggesting that the relative values based on these practices may be representative.

[10] The Commission is analyzing cost data for nearly 300 office services that account for a large share of total Medicare Part B payments. Seventy-nine of these are represented in the Model Fee Schedule. All services provided in the office and non-office settings have the same constant direct costs. Since a service's indirect cost relative value is its physician work value, indirect costs can be estimated for all non-office services that have been assigned work values.

Table 3-5. Fees Under OBRA89 And The Resource-Based (RB) Practice Expense Method For Six Services

	Total Payment			Practice Expense			Average Allowed Charge
Service and Site	OBRA89	RB	Ratio	OBRA89	RB	Ratio	(1988)
Removal of skin lesion (11640)							
Non-office	104.00	72.67	0.70	50.81	19.47	0.38	120.77
Office	104.00	111.30	1.07	50.81	58.11	1.14	126.48
Coronary arteries bypass graft (33514)							
Non-office	2845.37	1760.03	0.62	1428.22	342.89	0.24	4204.00
Fragmenting of kidney stone (50590)							
Non-office	804.22	547.68	0.68	387.36	130.72	0.34	915.56
Office	804.22	657.65	0.82	387.26	240.69	0.62	829.73
Cystoscopy and ureter catheter (52005)							
Non-office	193.49	164.11	0.85	71.15	41.77	0.59	175.95
Office	193.49	213.16	1.10	71.15	90.83	1.28	159.35
Office visit, intermediate (90060)							
Non-office	30.94	29.64	0.96	10.22	8.91	0.87	18.36
Office	30.94	39.73	1.28	10.22	19.01	1.86	26.21
Bronchospasm evaluation (94070)							
Office	57.68	73.87	1.28	27.98	44.17	1.58	82.55

Source: Commission simulations and HCFA Model Fee Schedule.

Note: HCPCS code for service in parentheses.

The resource-based payment for coronary artery bypass graft surgery is 38 percent less than the OBRA89 fee. This is an inpatient service that has had high allowed charges but for which the physician incurs few direct practice expenses. Under OBRA89, the practice expense payment would be $1,428, even though the hospital incurs (and will be paid for) most of the direct costs of the operation. By contrast, the practice expense payment under the resource-based method would be $343. This payment covers billing expenses plus overhead, such as rent and the costs of managing the office.

For some services, the OBRA89 payment level is comparable to the resource-based non-office fee but is not adequate for covering the costs incurred in the office, as exemplified by an intermediate office visit.[11] The ratio of the resource-based non-office payment to the OBRA89 payment for this service is 0.96, suggesting that the OBRA89 level is appropriate for the non-office setting. However, the practice expense component in the office is 86 percent higher than the OBRA89 amount, which would increase the payment by 28 percent. The OBRA89 payment for some services, such as removal of skin lesion and cystoscopy, is between the resource-based office and non-office payments.

For all of the services included in this simulation, the ratio of the total payment from the resource-based method to the OBRA89 method has an expenditure-weighted median of 0.95 (Table 3-6).[12] That is, services that account for half of total allowed charges (based on OBRA89 payment levels) would have payments that are at least 5 percent lower under the resource-based method than under OBRA89. Five percent of allowed charges received by physicians are for services that would have payments that are 54 percent of the OBRA89 payment level or less. Similarly, 5 percent of total allowed charges would be for services with payments that would be at least 42 percent greater than under the OBRA89 method.

FUTURE WORK

The Commission plans to continue its study of the resource-based method during the coming year. Two reports will be released for review by interested parties. One will provide additional details on the method and the data the Commission has used to study the method's feasibility. A second report will address implementation issues.

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[11] According to claims data, the code for intermediate office visits is sometimes used for services provided away from the office. Presumably these claims are for visits in outpatient departments and clinics, but not for hospital inpatient visits which have a different service code.

[12] As described earlier, all non-office services included in the Model Fee Schedule could be used in this analysis. However, only 79 office services were included in both the Model Fee Schedule and the clinic direct cost database. These 79 services account for 79 percent of the volume of office services included in the Model Fee Schedule. Therefore, the volumes and total payments for the non-office services were reduced by 21 percent to balance the representation of office and non-office services in this analysis.

Table 3-6. Expenditure-Weighted Distribution of the Ratio of Resource-Based Payment to OBRA89 Payment for 844 Services

Percentile	Ratio
5%	0.54
10%	0.55
25%	0.72
Median	0.95
75%	1.28
90%	1.41
95%	1.42

Source: Commission simulations.

Note: Ratio = Resource-based total payment/OBRA89 total payment, weighted by product of OBRA89 payment and 1988 service volume from BMAD data.

The methods report will begin by summarizing the accounting principles that underlie the resource-based method. This summary will address comments and questions that the Commission is currently receiving from physician groups and other interested parties. The report will elaborate on refinements of the method that could lead to more accurate practice expense relative values.

The report will also present additional details on the clinic data that have been used to demonstrate the method's feasibility. Direct cost relative values, based on clinic data, will be reported for an expanded set of approximately 300 services that are provided in the office. The relative contributions of labor, supply, and medical equipment expenses will be discussed. The report will also include new simulation results, based on additional services, additional clinic data, updated salary and fringe benefit data for nonphysician labor, and an expanded set of physician work values. Fee and practice expense estimates will be compared with updated estimates based on the OBRA89 method.[13]

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[13] Another feature of the new simulations is that 1988 practice expense data will be used to generate practice expense and fee estimates under the OBRA89 method. (Prior simulations were based on 1983 expense share data.) This means that the pool of practice expense dollars that will be used to simulate effects of the resource-based and OBRA89 methods from the 1988 BMAD data will reflect practice expense shares in 1988, rather than in 1983. Simulations will also reflect the impact of malpractice premiums in 1988, rather than in 1983.

Finally, the report will examine the effects of refinements in the resource-based method. Effects of alternative methods for assigning indirect costs will be analyzed. For example, Commission staff plan to simulate effects of allocating indirect costs in proportion to the total of physician work and direct costs. The role of the cost of nonphysician labor--the most important component of direct costs for most office services--will also be studied. In work to date, the direct cost of labor for each service has not included the cost of downtime that occurs in all production processes. The cost of downtime has been treated as an indirect cost and has therefore been spread over all services in proportion to physician work.

The second report will address implementation issues related to the resource-based method. One central issue is how the resource-based method could be calibrated so that it is representative of the average practice. The report will examine the role of service volume in estimating the unit cost of equipment and payments. It will also discuss how unit costs vary with practice size, using results from a survey of physician practices in 12 specialties that is currently being conducted for the Commission by the Medical Group Management Association. These results, plus data from other clinics, will be used to address how data collection efforts in the future can be designed to ensure that estimates reflect the costs of the average practice. Results will also be used to study how the resource-based method might be refined to calculate payments for those practices that must use equipment at less-than-efficient volume levels if care is to be accessible to patients.

In the course of completing its work with clinic data, Commission staff will continue to uncover issues that have implications for streamlining implementation of the method. For example, collection of data that are needed to calculate equipment costs is burdensome. Analysis of clinic data, however, has indicated that these costs are negligible for most services.[14] This report will address how data that would be required to implement the resource-based method could be efficiently collected.

Because simulations of the method suggest that it could have substantial distributive effects on physicians, a transition period would be necessary before the method is fully implemented. A transition could be defined in a variety of ways. This report will explore transition alternatives, including discussion of a time frame that would allow physicians to adjust their practices and expectations as smoothly as possible.

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[14] Staff are currently using clinic data to study costs of equipment-intensive services. This work should facilitate the design of data collection efforts necessary for implementation of the method.

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CHAPTER 4

MALPRACTICE EXPENSE

The costs of professional liability insurance (PLI) are unlike other practice expenses. Premium expenses vary substantially by specialty and may change significantly from year to year. By contrast, the costs that physicians incur for other inputs are often more predictable and vary less across specialties. Whereas physicians might be able to substitute less expensive for more costly labor and supplies over time, there is little choice in the market for malpractice coverage. The insurance expense is also a fixed cost that does not change as the physician treats more patients.

In its 1989 annual report to Congress (PPRC 1989), the Commission recommended that the costs of PLI be treated separately from other practice costs. The Omnibus Budget Reconciliation Act of 1989 (OBRA89) separates PLI from the other costs of practice and specifies how payments are to be calculated as part of the Medicare Fee Schedule.

The OBRA89 legislation specifies that the PLI payment for a given service will be the fraction of the 1991 national average allowed charge that corresponds to the fraction of the physician's revenue that is used to pay for malpractice coverage. Under this method, the PLI payment for an office visit would be based on the specialty of physicians who provide the visit. The internist who has relatively low premium expenses will receive a PLI payment that is higher than the premium he or she spends per dollar of revenue. By contrast, the obstetrician will be under-paid for the visit relative to his or her premium expenses per dollar, and may not recover the Medicare share of the premium.

The OBRA89 legislation also directs the Commission to study "appropriate methods for allocating malpractice expenses to particular procedures which could be incorporated into the determination of relative values for particular procedures" (Section 1848 (d)).[1] In this chapter, an alternative to the OBRA89 method is presented. Under this alternative--the "risk-of-service" (ROS) method--PLI payments would be calculated in proportion to the malpractice risk of the service. The office visit's PLI payment would be set at a level that reflects the resource costs of malpractice coverage for the lowest risk class physician who routinely provides office visits. At the same time, the additional premium dollars paid by physicians in higher risk classes would be spread over the higher risk services that they provide--the same services that triggered the physician's classification into the higher risk class. Total PLI payments to physicians in higher risk classes would be greater than under the OBRA89 method.

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[1] In its 1990 annual report to Congress (PPRC 1990), the Commission outlined four options. Two options addressed how PLI expenses might be covered in the Medicare Fee Schedule and are subsumed by the risk-of-service option presented below. The others--paying physicians directly for Medicare's share of PLI expenses and having the government serve as an insurer for services provided to Medicare beneficiaries--would remove professional liability expense payments from the Medicare Fee Schedule. Commission staff are currently studying advantages of tort reform and may consider broader PLI payment options as part of that work. Additional information on the direct payment option was expected as part of a study by the General Accounting Office that is no longer being carried out.

RECOMMENDATION

The Commission supports basing the malpractice expense component of the relative value scale on estimates of the risk of service. It has developed and tested the feasibility of a risk-of-service method and will be refining it on the basis of extensive discussion with interested parties.

The chapter begins with a discussion of how malpractice insurers base premiums on the risk class of the physician. In the second section, the two methods of assigning premiums to services are reviewed, beginning with the OBRA89 method. How payments would be determined under the ROS method is demonstrated using three classes of services and six physician risk classes.

In the third section of the chapter, the ROS and OBRA89 methods are evaluated using the criteria articulated in the Commission's 1990 annual report. Professional liability payments under the ROS and OBRA89 methods are compared with current malpractice insurance expenses. Results suggest that the ROS method would be more equitable to physicians. It would not impose additional administrative burdens on carriers, and payments could be more easily updated to reflect changes in malpractice premiums. The chapter concludes with a brief discussion of some refinements that could be made before the method is implemented as a substitute for the OBRA89 method.

BACKGROUND

The PLI premium is a cost of medical practice--the cost of protection against some of the economic losses associated with malpractice claims. In 1988, the average premium was $15,900, which represented 5.6 percent of practice revenues (Slora and Gonzalez 1989).

This implies that more than $1.2 billion of Medicare Part B expenditures on physician services went to pay for malpractice insurance expenses.[2]

Malpractice premiums vary substantially by physician specialty. In 1988, the average premium paid by general and family practitioners was $9,400. Surgeons paid an average of $26,500 for coverage, and physicians in obstetrics and gynecology paid $35,300 (Slora and Gonzalez 1989). Some variation in premium expenses may be due to differences in types of policies and liability limits (PPRC 1990), but most of the variation across specialties reflects differences in risk.

Malpractice insurers base the premium on the risk classification of the physician. Risk classes are generally defined according to the physician's specialty and services that the physician routinely provides. For example, the St. Paul Companies, Inc.--the largest provider of malpractice insurance--used 10 risk classes in 1985. Physicians representing many of the nonsurgical specialties, such as internists, general practitioners, and cardiovascular disease specialists, were classified in the low risk classes--designated as classes 1 and 2--depending on whether they assisted in surgery or provided minor surgical procedures such as needle biopsies and some catheterization procedures. The standard premium for a mature, claims-made policy (with $1 million / $3 million liability limits) for class 2 physicians was approximately 50 percent higher than for class 1 physicians, even though many of the same services are performed by physicians in each class.[3]

Surgeons were grouped into five risk classes by St. Paul. Ophthalmologists and urologists were assigned to class 3, with the standard premium twice as large as for class 1 practitioners. Physicians who routinely performed major surgeries under general anesthesia were grouped into risk classes 5 through 8. General and plastic surgeons incurred class 5 premiums that were 4.5 times as large as the class 1 premium for the standard policy. Orthopedic and thoracic surgeons were in class 6, even though some surgical (and nonsurgical) services provided by class 6 physicians are also available from class 5 surgeons. The highest risk classes were for obstetricians (class 7) and neurological surgery (class 8). Neurological surgeons faced premiums that were 9.5 times greater than those for class 1 physicians.

The premium-setting policies of private insurers have several implications for the design of a method of calculating PLI payments. First, different services are associated with different levels of exposure to malpractice risk. These differences should be exhibited in PLI payments if the method is to reflect resource costs.

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[2] Physician expenditures under Part B were estimated to be $21.6 billion in 1988 (Committee on Ways and Means 1989).

[3] Under a claims-made policy, the insurer is liable for injuries that occurred and claims that are filed during the period the policy is in effect. "Tail" coverage may be purchased for coverage against claims that are filed after the policy period has expired. (See PPRC 1990.)

Second, many services are provided by physicians who are in different risk classes. Evaluation and management services and certain basic diagnostic tests and procedures are routinely provided by both primary care physicians and surgeons. Some surgical procedures are routinely provided by surgeons who are in different risk classes. For example, hysterectomies are performed by gynecological surgeons (placed in class 5 by St. Paul), as well as by obstetrical specialists (class 7 physicians). The level of risk that is used to determine a service's PLI payment should reflect the risk classes of physicians who routinely provide the service.

Third, the premium is a fixed cost that reflects the types and mix of services routinely performed and not service volumes. Thus, any fee schedule method of payment will result in some distortions. Some practitioners will receive total PLI payments that exceed the Medicare share of their PLI premium, while others will be undercompensated, depending on the volume and mix of Medicare services provided.

METHODS OF CALCULATING THE MALPRACTICE EXPENSE COMPONENT

There are a variety of ways to spread premium costs over services. Some methods would allow the PLI payment to vary by specialty or risk class. The problem with these approaches is that the Medicare Fee Schedule would become administratively complex and burdensome for carriers.[4] Therefore, this section focuses only on the OBRA89 method and an alternative that would result in a single malpractice expense component of the relative value scale for each service.

The OBRA89 Method

Under the OBRA89 method, PLI payments are determined by spreading malpractice insurance expenses over services in proportion to their allowed charges. The PLI payment for a service would be calculated as the product of the national average allowed charge in 1991 and the malpractice expense fraction. The malpractice expense fraction is the premium expense-to-revenue ratio for the average physician who provided the service (using the most recent data available).

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[4] If the PLI payment were allowed to vary with the practitioner's risk class, carriers would have to initially determine the risk class of each Medicare practitioner and monitor his or her classification over time. Each service could have as many payments as the number of risk classes; each of these could conceivably be adjusted using more than one Geographic Adjustment Factor (see Chapter 5).

The data in Table 4-1 demonstrate how the PLI payment would be determined for a right heart catheterization procedure (HCPCS code 93501).[5] Cardiovascular disease specialists provided 63 percent of services. Physicians who classified themselves as internists provided 22 percent, while the rest of the services were distributed equally between radiologists and other specialists. The weighted average malpractice expense ratio is 0.039, indicating that the average provider of the service spent almost $4 of every $100 of revenue on malpractice insurance. The PLI payment of $14.81 is obtained by multiplying this fraction by the 1988 allowed charge for the service ($379.65).

Table 4-1. A Comparison of the OBRA89 and ROS Methods of Calculating PLI Payments: Right Heart Catheterization (HCPCS Code 93501)

		OBRA89 Method		ROS Method	
Physician Specialty	**Relative Frequency of Service**	**Premium Per Dollar Revenue**	**Payment (1988 dollars)**	**Risk Adjusted Premium Factor**	**Payment (1988 dollars)**
Cardiovascular disease	0.630	0.039	$14.81	0.028	$7.27
Internal medicine	0.218	0.033	12.53	0.046	11.95
Radiology	0.074	0.033	12.53	0.020	5.20
Other	0.078	0.061	23.16	0.061	15.87
Weighted mean	---	0.039	$14.80	0.034	$8.83

Source: Commission simulations.

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[5] HCPCS is an acronym for the Health Care Financing Administration's (HCFA) Common Procedure Coding System, the coding system used by HCFA for payment purposes. The data in Table 4-1, as well as in Tables 4-5 through 4-7 below, are from Commission simulations. The basis of these simulations is HCFA's 1988 Part B Medicare Annual Data (BMAD) Procedure File.

There are several problems with this method. First, it is predominantly charge-based. The PLI payments for services that are provided by the same mix of physicians would differ only in proportion to differences in the services' allowed charges. The difference in payments would reflect differences in the risk associated with each service only if allowed charges were highly correlated with risk.

Second, the OBRA89 method does not differentiate between services that expose a specialist to different levels of risk. As indicated above, malpractice insurers recognize that risk varies by service. Under the OBRA89 method, the same malpractice expense fraction would be used for every service provided by physicians of a given specialty. Thus, the method would apply the same malpractice fraction to an office visit and a Cesarean section that are performed by an obstetrician.[6]

Third, the premium-to-revenue ratios that are currently available for calculating payments are from survey data that may not accurately or appropriately measure the costs of malpractice insurance. The ratios were calculated using data obtained from respondents who were identified using stratified random samples of U.S. physicians. Although these data are the best that are currently available for these calculations, sampling methods were not designed specifically to yield efficient, nationally representative estimates of the malpractice premium-to-revenue ratio. Premiums can vary considerably by state. Therefore, if the average respondent does not represent the physician in the average state, the survey data may be somewhat imprecise and not truly representative of the average physician.[7]

The Risk-of-Service Method

Under the ROS method, PLI payments would be determined by spreading the malpractice premium of a standard policy over services in proportion to the risk of the service. A risk-adjusted premium factor--defined as the number of dollars per unit of physician work that would ensure that the average physician recovers the premium for his or her specialty and risk class--is calculated for each service. The actual malpractice expense component for a service would be obtained by multiplying the risk-adjusted premium factor for the average provider of the service by the service's physician work value.

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[6] The dollar PLI payments would obviously differ, but the differences are explained by differences in the allowed charges and in the specialty mixes of physicians who provide the service.

[7] Model Fee Schedule simulations by HCFA are based on data from the 1983 Physician Practice Cost and Income Survey, which was based on a sampling frame developed from the American Medical Association's (AMA) Physician Masterfile. Simulations by Commission staff are based on 1988 data from the AMA's Socioeconomic Monitoring System core surveys. Respondents to these were also selected from the Masterfile. The Monitoring System is designed to produce reliable estimates for physicians in ten specialties and nine census divisions, but "is less well suited ... for more detailed sub-specialty or geographic breakdowns" (Gonzalez and Emmons 1989, p. 140). How PLI payments will be adjusted for geographic differences in costs is not the subject of this chapter but is discussed in Chapter 5.

Example. A simple hypothetical example can be used to illustrate the ROS method. In this example, there are three risk classes of physicians who provide three different kinds of services (Table 4-2). Practitioners in class 1 provide only office visits. These are measured in work units (10,000). Risk class 2 practitioners provide visits (9,000 work units) and some higher risk, minor surgical services (3,000 work units). Risk class 3 is the class of highest malpractice risk: visits, minor surgical services, and major surgical services are provided by physicians in this group.

Table 4-2. Hypothetical Data for Illustration of the ROS Method

Risk Class	Total	Visits	Work Units Minor Surgery	Major Surgery	Premium	Relative Premium Index
1	$10,000	$10,000	0	0	$10,000	1.0
2	12,000	9,000	3,000	0	15,000	1.5
3	20,000	5,000	5,000	10,000	40,000	4.0

The relative premium index is a measure of risk that relates the premium of the risk class with the premium of the reference or base class (Table 4-2). Risk class 1 physicians face a standard premium of $10,000. Because the reference premium is the class 1 premium, the index value is 1.0. Class 3 physicians would pay a premium of $40,000, and the corresponding index value is 4.0 (because the class 3 premium is four times as large as the class 1 premium). The average risk level that confronts class 3 physicians is four times as large as the risk confronting physicians in the reference class.

The ROS method spreads the premium for the standard policy over services in proportion to service risk. For class 1 physicians, the premium can be assigned to individual services at the rate of $1 per work unit. This amount--defined as the risk-adjusted premium factor--is calculated by dividing the total premium ($10,000) by the number of risk-adjusted work units. The number of risk-adjusted work units is the number of work units (10,000) multiplied by the average risk faced by class 1 practitioners (measured as 1.0, using the relative premium index).

By design, the risk-adjusted premium factors are calculated to ensure that the average physician in each group recovers the malpractice premium of the standard policy. Thus, the PLI payments for remaining services are determined in a similar fashion. Class 2 practitioners face higher premium expenses because minor surgical services expose physicians to greater risk. Under the ROS method, visits would be assigned premium dollars at the rate of $1 per work unit, as for class 1 practitioners. The risk-adjusted premium factor for minor surgical services spreads the rest of the class 2 premium over these services. This factor can be calculated algebraically to ensure that the average level of risk facing class 2 practitioners is 1.5 (the relative premium index). Its value is 3.0 (Table 4-3).[8]

Table 4-3. Risk Adjusted Premium Factors for ROS Example

Risk Class	Minor Visits	Major Surgery	Surgery
1	1.0	----	----
2	1.0	3.0	----
3	1.0	3.0	6.0

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[8] For class 2 practitioners, 75 percent of work is for visits and the remaining 25 percent is for minor surgical services. Thus, the risk-adjusted premium factor is the value of F that satisfies the equation $[0.75 \times 1.0] + [0.25 \times F] = 1.5$, or $F=3.0$. Under the ROS method described in this chapter, the basis of assignment of malpractice dollars is the number of risk-adjusted physician work units for the service. The Commission has indicated a preference for using physician time rather that physician work as a basis for assigning practice expenses (PPRC 1990). Some preliminary simulations of the ROS method were used to compare effects of risk-adjusted time and work alternatives, but use of time was rejected because time values were not available for many services.

Class 3 physicians pay the largest premium because they provide major surgical services. The premium factors for visits and minor surgeries are set at 1.0 and 3.0, respectively. The implied factor for major surgeries is 6.0.[9]

The ROS method is a generic approach. Both simple and more sophisticated applications of the method are possible using available data. A simple application of the method and simulation results based on real premium and service data are presented in the next section.

Application of the Method. In this application, the malpractice premium for 32 specialties in eight physician risk classes is spread over three types of services.

Data from a subset of the 1988 BMAD Procedure File were used to identify services provided by each physician-reported specialty designation represented on the file.[10] Since the file does not identify services provided by individual physicians, it is not possible to distinguish between physicians of the same specialty who are in different malpractice insurance risk classes. For example, distinctions cannot be made between the service mixes of internists who do and do not have malpractice insurance that covers them for minor surgical procedures. Thus, each specialty has been placed in one of the eight risk classes used by St. Paul in 1988.[11] The risk classes and corresponding relative premiums for a claims-made policy with $1 million / $3 million liability limits are summarized in Table 4-4.

Services provided by each specialty were grouped into risk classes. In general, groupings should be based on the nature of the service or the risk class(es) of physicians who typically provide the service. For example, office visits should be grouped in a service risk class with other services that are routinely provided by general and family practitioners. Another risk class might be defined to include all surgical obstetric services that account for the difference between the premium that would be faced by a gynecological surgeon and an obstetrician.

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[9] The factor of 6.0 for major surgeries provided by class 3 physicians is the value of F that satisfies the equation, $[0.25 \times 1.0] + [0.25 \times 3.0] + [0.5 \times F] = 4.0$.

[10] The subset of the BMAD file is the set of services for which Commission staff have actual or simulated physician work values, less anesthesia and pathology services.

[11] When St. Paul's definitions divide a specialty into three risk classes, the "middle" designation has been chosen; for BMAD specialty designations that span two risk classes, the specialty has been classified in the higher risk class. It should be possible to construct more homogeneous risk class groupings using HCFA's new Common Working File. With this file, it should also be possible to infer risk classifications for physicians of the same specialty based on their service mix profiles.

Table 4-4. Risk Classes and Relative Premiums Used in the Application of the ROS Method

Class	BMAD Specialty Designations	Relative Premium Index
1	Allergy	0.8
2	Nuclear medicine; pulmonary disease; physical medicine and rehabilitation	1.0
3	Cardiovascular disease; dermatology; gastroenterology; general/family practice; geriatrics; gynecology; internal medicine; nephrology; neurology; ophthalmology; otology, rhinology, laryngology; pathology; pediatrics; psychiatry; radiation therapy; radiology	1.5
4	Proctology; urology	2.0
5	General surgery; hand surgery; oral surgery; plastic surgery	4.0
6	Orthopedic surgery; peripheral vascular disease/surgery; thoracic surgery	5.5
7	Obstetrics; obstetrics-gynecology	6.9
8	Neurological surgery	8.7

In this application, three groupings were constructed. "Visits" includes office visits, hospital visits, and consultations. The other groups are assistant-at-surgery services--when the physician assists another during a surgical procedure--and all other services provided by the physician.[12] The relative premium data from St. Paul were used to help assign and constrain the risk-adjusted premium values for visits and assistant-at-surgery services. In this application, the average risk per unit of work for visits is set at 1.0. This corresponds to the average per unit risk (or relative premium) facing physicians in class 2--the class that covered primary care physicians who did not also perform assistant-at-surgery or many other higher risk surgical procedures.[13] The average risk value for assistant-at-surgery services is set at 1.5, the level of risk of the primary care physician who also provided assistant-at-surgery services.

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[12] "Visits" include office, home, hospital, and nursing home visits (HCPCS codes 90000-90470), consultations (codes 90600-90699), preventive medicine services (codes 90750-90778), telephone consultations (codes 99013-99015), and some other miscellaneous services (codes 99050-99056 and 99070-99090). Assistant-at-surgery services were identified using BMAD type-of-service codes and HCPCS modifiers.

This ROS method spreads the additional premiums paid by higher risk class physicians over the higher risk surgical services that are integral to their specialty. The method can be illustrated for general surgeons. The average general surgeon represented in the BMAD file has been assigned to risk class 5. The average risk per unit of work for this class (the relative premium index) is 4.0. Approximately 25 percent of the surgeon's work is for visits and 15 percent is for assistant-at-surgery services. This implies that the risk value of other services is approximately 5.88. When the risk values of 1.0, 1.5, and 5.88 are converted to dollars, the risk-adjusted premium factors for visits, assistant-at-surgery services, and other services are $0.014, $0.021, and $0.082 per unit work, respectively.[14]

As noted above, the risk-adjusted premium factors for visits and assistant-at-surgery services were constrained to be the same for physicians in all specialties and risk classes. For other services, however, factors may vary by specialty and risk class because the same service may be provided by physicians in different specialties and risk classes, and because service mix varies by specialty. For example, surgeons allocate relatively less physician work to evaluation and management services than internists. The surgeon must recover relatively more premium dollars from higher risk surgical services than the internist. The average risk-adjusted premium factor, weighted by the relative frequency of services provided by the specialist, is used to determine the single payment for each service.

Data on the right heart catheterization procedure presented in Table 4-1 can be used to illustrate this application of the ROS method and how it compares with the OBRA89 method. The average risk-adjusted premium factor for the procedure is approximately three cents ($0.034). The PLI payment for the service, $8.83, is determined by multiplying this average factor by the number of physician work units for the service. Alternatively, the total ROS payment could be calculated as the average payment that would ensure that each provider recovers the standard premium, weighted by the fraction of services provided by the specialist.

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[13] Internal medicine, family practice, and general practice physicians who do not perform surgical services would be in class 2, as defined by the St. Paul Companies, Inc. In this analysis, these physicians were grouped in risk class 3, not class 2, because of BMAD data limitations noted above.

[14] The algebraic equation for general surgeons that describes the spread of the relative premium (4.0) across the three service classes is $4.0 = [0.253 \times 1.0] + [0.146 \times 1.5] + [0.600 \times F]$. The risk values in this application must be converted to dollars using a conversion factor. (The conversion factor is calculated as part of the simulation to ensure that the correct number of Medicare dollars is used to cover malpractice expenses.) In the example (Tables 4-2 and 4-3), conversion was not necessary because the conversion factor was 1.0 by design. The premium factor for other services by general surgeons ($0.082) exceeds the factor for internists ($0.046 from Table 4-1) by 78 percent.

This example illustrates how the ROS and OBRA89 methods differ. Under the OBRA89 method, the PLI payment reflects the variation in the premium-to-revenue ratio across providers. Under the ROS method, the PLI payment reflects how premium costs and service risk vary across providers. The payment for the catheterization service under the ROS method ($8.83) would be less than under the OBRA89 method ($14.80) because the ranking of providers by the malpractice expense fraction differs from the premium factor ranking. The risk-adjusted payment that the average cardiologist requires to ensure that the standard premium is recovered is less than half of the payment that would be made if the premium were spread in proportion to the premium-to-revenue ratio ($7.27, versus $14.81). The PLI payment that would cover the standard premium of the average radiologist ($5.20) is 58 percent less than under the OBRA89 method ($12.53).

Professional liability payments for some additional services are displayed in Table 4-5.[15] Because the same low level of risk was assigned to the intermediate office visit by a new patient (HCPCS code 90015) and a comprehensive hospital visit to a new patient (code 90220), their risk-adjusted premium factors are equal. Their PLI payments differ because their physician work values are different. The hysterectomy procedure (code 58150) is a service that would have a significantly greater PLI payment under the ROS method than under the OBRA89 method. Under the OBRA89 method, the premiums of surgeons and obstetricians-gynecologists are spread over all services they provide. Under the ROS method, relatively more premium dollars are assigned to surgical services than to lower risk visits.

In general, the ROS method results in higher PLI payments to those risk classes that are comprised of specialists who perform major surgeries (Table 4-6). The reason is that the additional premium dollars that are paid by higher risk physicians are attributable only to higher risk services, while PLI payments for low-risk visits and assistant-at-surgery services are set at levels corresponding to low malpractice risk classes. Total PLI payments to risk classes 5 and above would be $416.90 million under the ROS method (44 percent of total PLI payments), compared with $314.57 million (34 percent of total payments) under the OBRA89 method. General surgeons would receive 12 percent more under the ROS method; orthopedic surgeons would receive 34 percent more than under the OBRA89 method.

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[15] Tables 4-1 and 4-5 through 4-7 were obtained from Commission simulations. In these simulations, total malpractice expenses under both methods are equal. The total of PLI payments under OBRA89 is the number of dollars that is reallocated under the ROS method.

Table 4-5. Selected PLI Payments Under the ROS and OBRA89 Methods (1988 dollars)

		PLI Payment		ROS/OBRA89	Service Price
	Service	ROS	OBRA89	Payment Ratio	(ROS Method)
11100	Biopsy of lesion	$ 1.38	$ 1.34	1.03	$ 37.61
27130	Total hip replacement,simple	203.72	188.39	1.08	1818.19
30520	Repair of nasal septum	19.92	35.14	0.57	559.66
31620	Bronchoscopy	7.80	6.66	1.17	232.27
33510	Coronary artery bypass	171.71	218.50	0.79	1817.10
42820	Remove tonsils and adenoids	14.00	12.55	1.12	250.09
45330	Sigmoidoscopy	7.49	4.28	1.75	110.85
49500	Repair inguinal hernia	33.67	40.88	0.82	378.14
52601	Prostatectomy (TUR)	40.58	56.63	0.72	948.64
58150	Total hysterectomy	160.87	87.93	1.83	863.24
62270	Spinal fluid tap, diagnostic	4.12	1.86	2.22	59.89
66983	Remove cataract, insert lens	16.66	39.31	0.42	982.23
90015	Office visit, new, interm	0.90	1.83	0.49	40.70
90220	Hospital care, new, comp.	3.49	3.13	1.12	131.49
93000	ECG, complete	0.99	1.30	0.76	25.81
93501	Right heart catheterization	8.83	14.80	0.60	251.84

Source: Commission simulations.

Specialists in the lower risk classes would tend to receive smaller payments under the ROS method than under the OBRA89 method. Combined payments to physicians in classes 3 and 4 would be 11 percent less, and payments to internists would be 6 percent less under the ROS method.

EVALUATION OF THE ROS AND OBRA89 METHODS

The Commission's 1990 report identified three criteria that should be used to evaluate PLI payment options: whether the method is equitable to physicians, whether the method encourages efficiency, and whether the method imposes significant administrative costs on carriers. In this section, these criteria are used to compare the ROS and OBRA89 payment options.

Table 4-6. Distributional Impacts of the ROS and OBRA89 Methods

Risk Class	Specialty	PLI Payment (millions, 1988 dollars) ROS	PLI Payment (millions, 1988 dollars) OBRA89	ROS/OBRA Ratio	PLI Expenses from Survey Data (millions, 1988 dollars)
1 & 2	Total	$ 21.61	$ 18.56	1.16	$ 12.75
3	Total	500.03	559.83	0.89	504.30
	General/family practice	98.19	92.82	1.06	93.26
	General internal medicine	139.57	149.25	0.94	124.95
4	Total	41.68	45.58	0.91	48.47
5	Total	147.88	131.40	1.13	157.70
	General surgery	137.11	122.63	1.12	144.94
6	Total	179.84	154.29	1.17	178.06
	Orthopedic surgery	121.68	90.52	1.34	100.63
7 & 8	Total	47.50	28.88	1.64	37.26

Source: Commission simulations.

Equity

According to the equity criterion, the average physician of each specialty and risk class should recover the Medicare share of the malpractice premium. In order to examine empirically the fairness of each payment method, the projected PLI payment should be compared to the Medicare share of the premium for the average physician of each specialty and risk class.

Two measures of premiums or benchmarks can be used to study distributional effects of the options. The first measure is an estimate of the Medicare share of the premium of a standard policy incurred by physicians--the standard policy that has been used to demonstrate the ROS method. The second measure is calculated from physician survey data--the data that would be used to estimate the malpractice expense component under OBRA89.[16]

The ratio of total PLI payments to current malpractice expenses can be used to compare the ROS and OBRA89 methods. The ratio has been calculated for each measure of current malpractice expense. Results indicate some support for the ROS method (Table 4-7). The PLI payment-to-standard premium ratios are closer to 1.0 under the ROS method than under the OBRA89 method for each risk class grouping, meaning that ROS payments more closely approximate current expenses for the standard policy. For example, class 3 physicians would be overpaid by 7 percent under the ROS method and by 20 percent under OBRA89. The ROS method would also be preferred for the specialties in Table 4-7, except internal medicine. The ROS underpayment to general surgeons would be only 7 percent, versus 17 percent under OBRA89.

Table 4-7. Ratios of the PLI Payment to Current Malpractice Expenses

Risk Class		Specialty	Expense = Premium of Standard Policy		Expense = Expenditure from Survey Data	
			ROS	OBRA89	ROS	OBRA89
1 & 2	Total		1.66	1.42	1.69	1.46
3	Total		1.07	1.20	0.99	1.11
		General/family practice	1.02	0.96	1.05	0.99
		General internal medicine	0.96	1.03	1.18	1.19
4	Total		1.10	1.21	0.86	0.94
5	Total		0.93	0.83	0.94	0.83
		General surgery	0.93	0.83	0.95	0.85
6	Total		0.90	0.77	1.01	0.87
		Orthopedic Surgery	0.95	0.71	1.21	0.90
7 & 8	Total		0.79	0.48	1.27	0.78

Source: Commission simulations.

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[16] Estimates of the Medicare share of the standard policy were obtained by distributing the pool of dollars estimated from the survey data across specialties in proportion to physician work, weighted by the specialty's relative premium. An estimate of the premium expense for each specialty in 1988 was calculated by multiplying total allowed charges paid to each specialty by the malpractice premium-to-revenue ratio for that specialty.

If current expenses are measured from survey data, however, the ROS method does not appear as favorable.[17] The ROS ratio is closer to 1.0 for only three of the six risk class groupings. Payments calculated under OBRA89 more closely approximate current expenditures for general and family practitioners and orthopedic surgeons.[18]

Although empirical evidence does not unambiguously support the ROS or OBRA89 method, the Commission believes that the ROS method is more equitable. First, the accuracy of the survey data is suspect. As previously noted, the premium-to-revenue ratios are not necessarily representative of specialties, and they may not accurately capture variations in costs across geographic areas. Furthermore, these ratios are measures of expenditures on coverage that physicians actually purchase. There is no way to control for differences in the types of policies purchased by survey respondents.

Second, the total number of misallocated dollars--that is, the sum of the differences between PLI payments and current expenses--is considerably lower under the ROS method than under the OBRA89 method. The ROS misallocation ranges from $42 to $89 million, while the OBRA89 distortion ranges from $123 to $210 million, depending on the measure of current expenses. There is no reason to believe that as application of the ROS method--a method that is inherently more resource-based--is refined, additional equity will not be achieved. The Commission supports continuing efforts to refine the method when data from the Common Working File become available.

Finally, payments under the ROS method can be readily updated to reflect changes in premiums. Because malpractice premiums can change rapidly and substantially, frequent updating is important if payments are to remain equitable. How OBRA89 payments would be updated over time is not clear, given the importance placed on base-year allowed charges. Updating might require the use of more current survey data. Survey data collection would be more time-consuming than obtaining premium data from insurers.[19]

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[17] Comparison of ratios based on survey expenditures and expenses on the standard policy indicate that current expense estimates differ more for some specialties and risk classes than for others. Differences may reflect distortions in the survey data noted in the text, and that services that are provided by physicians of the same specialty but who are in different risk classes cannot be identified using currently available data. Use of HCFA's Common Working File may help deal with the latter problem.

[18] Both methods under- and overpay individual physicians. This occurs when costs that are fixed are recovered on a service-by-service basis. Payment discrepancies will also occur because the PLI payment would be calculated for the average physician.

[19] A survey that is specifically designed to measure the expense of malpractice insurance may be necessary to improve the accuracy of payments under the OBRA89 method.

Efficiency

A payment method that encourages efficiency is incentive-neutral. This means that the method does not distort incentives faced by physicians to provide some services over others (PPRC 1990), and that program beneficiaries would only incur expenses associated with the resource costs of the service. Services with low malpractice premium costs should have low PLI payments. Conversely, PLI payments should be higher for those services that increase physicians' malpractice expenses. The difference in PLI payments between two services should reflect the difference in malpractice premium expenses incurred, so that the physician receives the same monetary return per unit of physician work.

The ROS method comes closer to satisfying the incentive neutrality principle than the OBRA89 approach because payments more accurately reflect premium costs. Under the ROS method, PLI payments would be based on service risk and the overall premium confronting the average physician. Under the OBRA89 method, the difference in malpractice expense components of two services provided by physicians of the same specialties is proportional to the difference in allowed charges. Incentive neutrality would be realized only if this difference is proportional to the difference in service risk; there is no reason to expect that this is the case.

Administrative Simplicity

The administrative burden on carriers would be the same under both options, with the possible exception of the burdens associated with updating payment values. Updating ROS payments could be more easily accomplished because timely premium data can be quickly obtained from insurers.

FUTURE REFINEMENTS OF THE ROS METHOD

The Commission anticipates some additional refinements of the ROS method after it is reviewed by interest groups. Resolution of a number of other issues is also required prior to implementation of the method. This section summarizes work to be undertaken by Commission staff during the coming year and other work that could be undertaken by the Health Care Financing Administration prior to implementation.

During the coming year, the Commission will seek comments on the ROS method from physician groups and other interested parties. A report summarizing the ROS method, including a listing of PLI payments under the ROS and OBRA89 methods, will be circulated for review. Commission staff will review comments and use them to help refine the method.

HCFA should undertake several refinements before implementing the method. First, a more sophisticated application than the one presented in this chapter should be developed by refining the service risk class groupings. For example, the visit group should be expanded to include other services that are routinely provided by primary care physicians who are classified among the lower malpractice risk classes. Thus, services such as removal of ear wax, certain vaccinations, and the setting of simple fractures could be assigned low risk values. This would reduce the PLI payments for these primary care services, and increase premium dollars assigned to services with higher risk values.

Payments would more accurately reflect resource costs if certain service risk classes were more narrowly defined. For example, obstetrical services should be divided into those provided by general surgeons and gynecological surgeons (surgeons who are classified in lower risk categories than obstetricians) and services provided only by obstetricians. The risk weight for services in the former group could be constrained at the general surgeon level, so that the difference between the general surgeon and obstetrician premiums would be loaded onto obstetrics-only services. Service groupings can be refined using existing BMAD service frequency data, or with recommendations from clinicians.

Another refinement to improve the accuracy of PLI payments is to base relative premiums on premium data that represent the malpractice industry. Relative premiums that were used in the application described above were from one company--albeit the largest. More representative premium data could change relative premium values, which would affect relative PLI payment values.

Finally, other data sources should be used to more accurately characterize the service mix of physicians in each risk class. As noted above, the BMAD Procedure File does not permit distinguishing between physicians of a given specialty that are in different physician risk classes. The Common Working File could conceivably be used for this purpose.

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CHAPTER 5

GEOGRAPHIC ADJUSTMENT FACTORS AND PAYMENT AREAS

As specified in the Omnibus Budget Reconciliation Act of 1989 (OBRA89), the Medicare Fee Schedule will reflect geographic differences in the opportunity cost of physician work, practice expenses, and malpractice expenses. In particular, OBRA89 requires the Secretary of Health and Human Services to develop indexes for each of these costs. The three indexes will be combined to create a geographic adjustment factor (GAF) for each service in each fee schedule payment area.[1] A GAF will be created for each service by combining the three indexes to reflect the relative mix of physician work, practice expenses, and malpractice expenses incurred in the delivery of the service, as captured by the three components of the relative value scale.

OBRA89 directs the Commission to analyze the GAFs and their construction. The Commission has found that the measures used by the Health Care Financing Administration (HCFA) in its Model Fee Schedule are reasonable, given currently available data (Federal Register 1990). However, the Commission encourages the Congress to expand the ongoing data collection responsibilities of the Administration to include information on commercial rents.

Under current policies, the fee schedule payment areas will be the 240 current carrier localities. OBRA89 stipulates that the Commission study the appropriateness of retaining these localities as fee schedule areas and examine feasible alternative payment area definitions. The Commission recommends replacement of current localities with a specific alternative.

RECOMMENDATION

Current carrier localities should be replaced with statewide fee schedule payment areas except in states with high intrastate price variation. In each of these states up to five payment areas should be defined, corresponding to metropolitan statistical area (MSA) population categories (more than 3 million, 1 to 3 million,

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[1] The geographic indexes for practice expense and malpractice expense will reflect the full variation in prices, while the index for the opportunity cost of physician work is constrained to reflect only one-quarter of the variation in costs.

250,000 to 1 million, fewer than 250,000, and nonmetropolitan). Current statewide localities should continue as such. Each MSA that crosses state borders should have a uniform index value and be treated as if it falls entirely within the state that contains the largest share of its population.

Under this recommendation, the number of statewide fee schedule areas in the continental United States would increase from 14 to 34, and the total number of payment areas would decrease from 237 to 94.[2]

The first section of this chapter reviews the Commission's investigation of the price measures used to calculate the GAF. The use of an input price index as the basis of geographic adjustment of the Medicare Fee Schedule is discussed. The actual input price measures used are compared with alternatives to determine how well they capture the desired price. The second section of the chapter presents the analysis of payment areas that led to the Commission's recommendation. It describes the criteria used to compare alternative area definitions and discusses the four alternatives considered. These four are then compared to localities with regard to the three criteria.

GEOGRAPHIC ADJUSTMENT FACTORS FOR THE MEDICARE FEE SCHEDULE

Under the geographic adjustment mandated by OBRA89, separate geographic price indexes will be used to capture the opportunity cost of physician work,[3] practice expenses, and malpractice expenses. The total geographic adjustment for each service will reflect the proportions of physician work, practice expenses, and malpractice expenses established by the component relative values for the service. This section first describes the geographic adjustment factors defined in OBRA89. It then addresses some of the criticisms that have been made of the type of index that is being used and the price measures that underlie the GAFs in HCFA's Model Fee Schedule (Federal Register 1990). It includes some analyses of alternative measures to determine the appropriateness of the measures used.

Geographic Adjustment Under OBRA89

The Medicare Fee Schedule is based on three relative value components, reflecting the relative physician work, practice expense, and malpractice expense represented by each service. These three components added together give the total relative value of each service. Under a single national payment system, the total relative values would simply be multiplied by the conversion factor, which represents the dollar value of a relative value unit, to create a fee for each service. However, OBRA89 allows for some geographic variation in fees under the Medicare Fee Schedule, reflecting the variation in input prices that physicians face across the country.

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[2] There are 240 localities included in HCFA's Model Fee Schedule. However, the analysis in this chapter is restricted to the continental U.S., excluding Alaska, Hawaii, and Puerto Rico.

[3] As mandated in OBRA89, only 25 percent of the variation in physician work opportunity costs will be included in the index for physician work.

As described in OBRA89, the three relative value components of the fee schedule will be adjusted by an index that measures the geographic variation in the prices of each component. The Secretary is responsible for developing a relative price index for each of the three components. These will be combined to create the GAF for each service, which is calculated in a two step process. First, the percentage of the total relative value units for the service that is represented by each of the three relative value components is calculated. The three input price indexes are then weighted by these percentages, or shares, to create a single GAF for the service.

For example, consider a service with relative values for physician work, practice expense and malpractice expense of 23, 15, and 6, respectively. The total relative value for this service is 44, the sum of the three components. In this case, physician work contributed 52 percent of the total relative value units, practice expense contributed 34 percent, and malpractice expense, 14 percent. In a payment area where the relative price indexes for physician work, practice expense, and malpractice expense are 1.05, 1.14 and 1.10, the total GAF for this service would be 1.09.[4]

As the example shows, the total GAF for a service in a particular payment area depends on the relative share of the total relative value units contributed by each of the three components and the values of the three price indexes in that payment area. Since the relative shares of physician work, practice expense, and malpractice expense differ across services, the final geographic adjustment of the Medicare Fee Schedule will be based on separate GAFs for each service. These GAFs reflect the relative shares of the three relative value components, used as weights, and the three input price indexes that reflect the variation in input prices across payment areas. It is very difficult to characterize the effect of the geographic adjustment on the distribution of Medicare physician payments, since it will be influenced by the distribution of services across payment areas as well as the three input price indexes.

Type of Index Used to Geographically Adjust the Medicare Fee Schedule

The Model Fee Schedule creates GAFs from indexes of input prices, an approach that is supported by the Commission. Because the Medicare Fee Schedule is based on a concept of accounting for the resources used, on average, to deliver each service, the geographic adjustment should relate to the geographic variation in the prices of those inputs. Physicians would then be paid in a way that reflects the prices they face in their communities.

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[4] Weighting the three price index values by the three weights gives $0.52*1.05 + 0.34*1.14 + 0.14*1.10 = 1.09$.

The geographic adjustment of the Medicare Fee Schedule is simply meant to reflect input price differences across the country. Other adjustments to the Medicare Fee Schedule may be appropriate to address issues besides geographic variation in prices. For example, there may be a perceived lifestyle cost to being the sole practitioner in a small community. Therefore, to induce a physician to practice in such a community, payments may have to be higher than would be suggested by local input prices. Access issues like these should be addressed explicitly with other adjustment factors, such as the bonus payment in Health Professional Shortage Areas (HPSAs), since the geographic adjustment is not appropriate for this purpose.

Some have argued that the geographic adjustment factors should be based on data measuring actual physician expenditures for practice inputs rather than input price measures. This approach would require an extensive data collection effort and is analytically inferior to an input price index. Physician expenditures incorporate both the prices paid by physicians for inputs and the quantity of inputs used. While physicians must pay prevailing prices for inputs, they have some discretion over the quantity of inputs used. Actual quantities used also reflect differences in the efficiency and the amenities of a physician's practice, both of which may have been substantially affected by historical charges. Thus, physicians in specialties or geographic areas in which fees have been especially high relative to input prices could have higher levels of amenities and lower levels of efficiency. Since current physician expenditures reflect, to some extent, the current payment environment, incorporating them into the Medicare Fee Schedule would contradict one of the major goals of reform.

A reimbursement-based index might capture special circumstances that affect certain classes of physicians that are not the result of local prices but of their inability to affect the quantities of inputs demanded. There is no reason to assume, however, that such circumstances necessarily apply to certain geographic areas. Therefore, as stated above, such circumstances can be better addressed with explicit additional factors.[5]

To illustrate the difference between an input price versus an expenditure index, consider a hypothetical study of the grocery costs of four-person families in two cities. An index that compares total expenditures on groceries in each city would implicitly include differences in affluence, preferences, and shopping behavior between families in the two cities. While this might be informative, it does not allow for any analysis of how food prices compare in the two cities. A price index accomplishes this by holding these other factors constant and isolating the differences in prices confronting consumers in the two cities. Since price is the only part of a family's grocery expenditures that is beyond its control, a price index would provide more information about the market families face in each city.

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[5] An example of explicit treatment of practitioners' inability to control the quantity of inputs they buy is included in the method of calculating practice expenses recommended by the Commission in this report. Because practitioners in remote areas cannot operate at the same service volumes that are used to calculate equipment costs, the method provides for an alternative volume assumption in these areas.

The forerunners of the GAF are based on fixed price shares, or weights, while the GAF has been defined to allow for different price shares across services. The original geographic practice cost index (GPCI) created by the Urban Institute (UI) and Center for Health Economics Research (CHER) combined five input price measures into a single price index, based on national average price shares (Welch and others 1989). The GAF for each service will reflect the relative shares of physician work, practice expense, and malpractice expense for the service. The use of service-specific GAFs will allow Medicare payments to reflect some regional variation in cost shares, to the extent that such variation is the result of different mixes of services provided.

Because the GAF is different for each service, it is impossible to summarize the overall geographic distribution of total Medicare physician payments without case-mix information for different areas. For example, consider two services, A and B, in two payment areas, X and Y. For service A, the GAF in area X is 1.20 and in area Y is 1.10; for service B, it is 1.05 and 1.03, respectively. Without any information about the relative frequency of the two services, it seems that the average Medicare geographic adjustment in area X will be higher than that in area Y. However, if service A is rarely performed in area X, and service B is rarely performed in area Y, then the average adjustment to area X will be close to the 1.05 GAF of service B, while that in area Y will be close to the 1.10 GAF of service A. Therefore, to summarize the geographic adjustment for a payment area, it is necessary to calculate, in effect, a case-mix adjusted GAF.

Price Measures Used in the GAF

To construct each GAF for the Model Fee Schedule, HCFA used the five input price measures--professional and employee wages, rent, medical supplies and equipment, and malpractice premiums--that UI/CHER identified for use in the original GPCI (Federal

Register 1990).[6] The practice expense index was created from the nonphysician wage, office rent, and medical equipment and supplies components of the original GPCI. The physician work and malpractice measures used in the original GPCI were used for the other two component indexes of the GAF. One of the central tasks in developing the original GPCI was an exhaustive search for appropriate price measures that were available throughout the country. This proved to be an important constraint, and the resultant components of the original GPCI represent the best measures that could be found.[7]

Despite the effort that went into their selection, the measures used to calculate the original GPCI have met with some criticism. For example, the use of the fair market apartment rent data produced by the Department of Housing and Urban Development (HUD) has been criticized as inappropriate for characterizing the market physicians face when renting (or buying) office space. However, the input prices are meant to capture relative, not absolute, costs, so that a measure that is apparently unrelated to the desired cost may reflect relative costs quite well. Intuitively, while it is unlikely that rent for physician office space is equal to rent for apartments in the same area, it seems likely that, in general, where apartments are expensive, so is physician office space. Therefore, use of the HUD rent data, while obviously doubtful as a source for the absolute level of the rent for office space, could be quite accurate in generating relative office rents. Another criticism has been that the measures fail to capture important urban/rural patterns of price variation, especially with regard to nurses' wages, and tend to understate rural prices.

The malpractice index has been criticized because it reflects low coverage policies, uses out-of-date premium data, and ignores contributions to patient compensation funds, which are mandatory in some states. HCFA is currently developing a new malpractice index to address these criticisms. The planned enhancements will improve the index substantially.

Because of the criticism of the nurses' wage and residential rent measures, the Commission carefully investigated the correlation between the price measures used by HCFA and other measures of the prices faced by physicians. The price measures were selected because they were expected to be highly correlated with the actual prices faced by physicians and were well-defined nationwide. Some have argued, however, that the nurses' wage and residential rent measures do not capture the geographic variation in prices. To investigate the appropriateness of the measures used, alternative measures of these two prices have been compared with those used by HCFA to determine how well geographic patterns of prices are captured in HCFA's GAFs. For comparative purposes, the alternatives do not have to be defined nationwide, since comparisons can be made with data that are only available for a limited geographic area. Particular effort has been made to study differences between metropolitan and nonmetropolitan areas, as captured by alternative measures, to detect any downward bias in rural areas reflected in the measures used by HCFA. (Nonmetropolitan, henceforth shortened to nonmetro, is used to refer to all areas that are not part of an MSA, while metropolitan, or metro, refers to all areas that are included in an MSA.)

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[6] The cost of physician time is measured by professional wages from the 1980 Census wage survey; employee wages are captured by wages of clerical workers, registered nurses, licensed practical nurses, and health technicians from the same wage survey. Rents are captured by HUD apartment rents. Malpractice insurance costs are based on the weighted average of premiums paid for three risk classes, with the weights given by the share of Medicare spending accounted for by each class. Equipment and supplies are transacted in a national market, so the price index is equal to one in all areas. A set of fixed cost shares for these five items was estimated from the American Medical Association's (AMA) *Socioeconomic Characteristics of Medical Practice, 1987*. The original GPCI is calculated for payment areas defined by MSAs and the nonmetropolitan parts of states.

[7] The malpractice index was created by the UI/CHER researchers.

The fact that the wage data are now more than 10 years old has caused some to argue that they are not appropriate, especially because they cannot reflect any differential impact of the apparent nurse shortage on wages in urban and rural areas. To address concerns about the nurses' wages used to calculate the GAF, the Commission compared data from a nationwide sample of nurses' wages from the 1988 Bureau of Health Professions' (BHP) National Sample Survey of Registered Nurses with the Census wage data used in the GAF to see if they reflected similar patterns of geographic variation. Comparable indexes of nurses' wages were constructed from each source.[8] The index means, by population category, are slightly different between the two sources, but the relative differences are similar across the population categories (Table 5-1). The largest difference between the two indexes is in nonmetro areas, where the Census index has a higher mean than the BHP index. Overall, the pattern of metro/nonmetro wages as measured in the Census data is not biased against nonmetro areas. However, the Commission recommends that HCFA recalculate the GAFs with 1990 Census data as soon as they become available.

The use of HUD apartment rents to capture rent for office space was also investigated. No single source of commercial rents in several metro and nonmetro areas could be found for comparison, so a comparison of such differences from alternative data sources could not be performed. (More than 60 government and private organizations and experts were asked to suggest sources of commercial rent data.)

To get some insight into the appropriateness of the rent measure, the Commission contracted with CHER to gather data on several related items, including construction costs, land prices, and office rents, for some urban areas. Limited data on office rents were available from two different surveys, one published by the Building Owners and Managers Association and the other by The Office Network. The construction and land price data were used to construct a cost-of-construction index. This index, along with indexes derived from each of the two surveys of commercial rents, was compared with the HUD rent data.

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[8] The nonprofessional wage used in the practice expense index includes Census wages for several types of workers. However, for this comparison, only nurses' wages were used.

Table 5-1. **Alternative Nurse Wage Indices by Area Population (1.00 = U.S. population-weighted average)**

Area Population	Based on Census Wage Survey[a]	Based on BHP Survey
Metropolitan	1.03	1.03
Over 3 million	1.14	1.13
1-3 million	1.04	1.06
.5-1 million	0.96	0.97
.25-.5 million	0.98	
under .25 million	0.95	0.98
Nonmetropolitan	0.91	0.87

Sources: 1980 Census of Population and Housing, 20 percent sample.

Bureau of Health Professions, 1988 National Sample Survey of Registered Nurses.

Note: [a]Currently used in calculating practice expense GAF.

The analysis showed that HUD fair market apartment rents are reasonably well correlated with each of these measures but that there is a large difference in the variance of rents as captured by these measures. Some of this difference may be attributable to the areas covered by the data. Since 15 cities were common to each of the sources, a rescaled version of each index was created so that each had a mean of one within this limited universe. The relative ranks of the cities according to each of the indexes were studied. The consensus ranking of these cities from the three alternatives matched the HUD ranking quite well. In particular, the HUD rank of each city was always within the range of ranks from the other three measures. The standard deviation of the rescaled HUD index was similar to that of the commercial rent surveys across this list of cities. Overall, the HUD data seemed to do well in the relative rankings of different areas and, when the universe was standardized, had variation similar to two of the three alternatives. These findings, combined with the fact that these data are well-defined nationwide, suggest that the HUD rent data are a reasonable measure for the office rent element of the practice expense index.

Any alternatives that become available and are well-defined nationwide should be considered as candidates for the index. Indeed, the Commission encourages the Congress to mandate some additional responsibilities for an agency with ongoing nationwide data collection capabilities to produce a national index of commercial rents. The discrepancies between the few available sources suggest that this is an area that could particularly benefit from a new, complete data source.[9]

One aspect of the price measures that can be improved is timeliness, particularly with regard to the wage data. Economic cycles can lead to changes in relative wages and rents, so the wages, which are based on 1980 Census data, should be updated as soon as 1990 data are available. Ideally, the wage data should also be updated at some point between Census years. Such updating could be done using a variety of measures. However, this issue can be pursued more effectively when the payment areas have been defined. The final fee schedule payment areas will affect which measures are feasible for use in updating the wage indexes, since some measures are available only at the state level and others, at more disaggregated levels. The rent measure should be updated regularly, since HUD publishes those data annually.

FEE SCHEDULE PAYMENT AREAS

The GAF for a service is defined for a set of distinct geographic areas that completely describe the United States. If there is no policy change before implementation of the fee schedule, each GAF will be based on the 240 current Part B payment localities, which have been defined by carriers. Locality definitions vary tremendously across the states, but there are some common patterns. More than one-third of the states have single, statewide payment areas. Of the remaining two-thirds, most are divided up in a way that separates metro areas from less populous areas. In some states, this is done through payment areas defined strictly by, for example, three categories of county population, so that all counties within each population range, whether or not they are contiguous, define each area. In other states, localities are composed of contiguous counties surrounding some sort of population center (although not necessarily MSAs) until all counties are accounted for. Localities are not defined on the basis of county boundaries; in 129 cases, they divide counties.

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[9] This data collection and reporting task could be assigned to one of several agencies. For example, the General Service Administration (GSA) currently collects commercial rent data from many cities across the nation because it is responsible for leasing office space for the federal government. The marginal cost of extending its effort to provide more complete geographic coverage of the United States may be slight, but the GSA has not historically had a role publishing and maintaining data for public use. HUD and the Commerce Department both have ongoing collection and publication responsibilities and may be able to take on this additional task without prohibitive additional costs.

The Commission's 1990 *Annual Report to Congress* listed the following three criteria to be considered in analyzing alternative area definitions (PPRC 1990):

- accurate tracking of variation in prices,
- minimization of differences at area boundaries, and
- administrative and conceptual simplicity.

There are clear trade-offs among these three criteria. Smaller areas will more accurately track input prices but may increase administrative complexity and be confusing to physicians and beneficiaries, while larger areas will be more conceptually appealing but may not reflect local price variation very well. Smaller areas may result in smaller differences at area boundaries but will involve more boundaries.

Alternative Fee Schedule Payment Areas and the GAF

The Commission compared four alternative fee schedule payment area definitions with current localities: statewide, MSA/nonmetro parts of a state,[10] and two hybrids that create separate payment areas only within states where input prices vary greatly.[11] The MSA/nonmetro definition creates a payment area for each MSA and combines the nonmetro parts of each state into a separate area. The two state hybrids leave most states as statewide areas but divide the 16 states with the highest price variation into several substate areas. Under the state/MSA hybrid, the payment areas within these high price-variation states are defined by the MSAs and nonmetro areas. Therefore, within these states, the payment areas are the same as under the MSA/nonmetro definition. In the state/category hybrid, the payment areas within the high price-variation states are defined by MSA population categories. Under this scheme, MSAs within each high price-variation state are grouped by population categories (more than 3 million, 1 to 3 million, 250,000 to 1 million, fewer than 250,000, and nonmetro), each of which defines a payment area. Therefore, similarly sized MSAs within each state create noncontiguous payment areas.

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[10] New England County Metropolitan Areas (NECMA) are used instead of MSAs in the New England states, to avoid dividing counties.

[11] Seven other alternatives were initially included in the Commission's analysis. However, they were dropped early in the analysis as it became clear that they were inferior to other alternatives. These options were: nation, region, division, Bureau of Economic Analysis Areas (BEAA), BEAA metro/nonmetro, MSA/BEAA nonmetro, and a state hybrid in which the seven states with the highest price variation were divided into MSA/nonmetro areas.

Under the state hybrids, the number of statewide areas in the continental United States would increase from 14 to 34.

The four alternatives were included because they represent logical approaches that have different strengths. Statewide areas have been suggested by many largely because they would be simple and represent a geographic unit with boundaries that are somehow meaningful; laws, insurance, and taxes all vary to some extent among states. The MSA/nonmetro configuration has been suggested as the best way to capture price variation, since MSAs are defined to encompass market areas. The two state hybrids were designed to capture the best of each. They retain statewide areas to the extent that states are relatively homogenous with respect to prices but create substate areas in states where prices vary beyond an acceptable degree. In the state/MSA hybrid, the substate areas are defined to capture as much price variation as possible. Conversely, the state/category hybrid allows for some within-state variation but constrains the number of within-state areas to a maximum of five. By taking advantage of the fact that prices are highly correlated with MSA size,[12] this option can capture a large share of within-state variation without creating nearly as many areas as the state/MSA option. While some MSAs have prices that differ from those in other similarly sized MSAs in the same state, combining them into noncontiguous areas increases the sample sizes that underlie some of the input price measures, thereby making the indexes more reliable. To determine whether any of these alternatives should be used instead of the current carrier localities, they were all compared to localities using the three criteria listed above.

The analysis of the five payment areas is based largely on the GAF for a hypothetical service,[13] measured at the county level.[14] This county-level measure was aggregated to create index values under each of the five definitions. Since input price measures are not available for subcounty areas, the analysis cannot address within-county price variation. Any analysis at the subcounty level would require an extensive data collection effort. However, it can be argued that, in general, any redistribution of physicians within a county that results from using a measure that fails to capture such variation is not of tremendous concern.[15]

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[12] The correlation between MSA size and prices is shown throughout the UI/CHER report. (See, for example, Welch and others, Table II-4, p. 19.) The analysis that CHER has done for the Commission has led to similar findings. For example, the mean county GAF for MSAs with populations of more than 3 million (1.12) is significantly different from the mean for nonmetro counties with populations of more than 50,000 (0.94), at the 1 percent level of significance.

[13] To illustrate different payment areas' ability to capture local price variation, one GAF was required. The set of physician work, practice expense, and malpractice expense shares selected to calculate the GAF for this hypothetical service is equal to that used for the original GPCI. In particular, the physician work, practice expense, and malpractice expense shares are .542, .402, and .056, respectively. Again, only 25 percent of the variation in physician opportunity costs is included in the GAF. Under the Medicare Fee Schedule, each service will have its own GAF, reflecting the relative shares of physician work, practice expense, and malpractice for the service.

[14] It is important to note that not all input prices are measured at the county level. In particular, malpractice premiums and metropolitan rents are not measured below the MSA/nonmetro level, so cannot vary across counties within an MSA. Therefore, the only variation introduced within the MSA/nonmetro areas when defining a county-level GAF comes from physician and nonprofessional wages and nonmetro rents. Similarly, some current localities are defined within counties but have been enlarged to include the entire county for purposes of these comparisons.

As mentioned above, the two state hybrids divide the highest price-variance states into more than one payment area. To determine the states that should be divided into substate areas, the variation in the county GAF was calculated (Table 5-2). The distribution is tightly clustered around the median of 0.030, but several states have much larger price variation.[16] The table shows that, except for Delaware, current statewide localities all have less price variation than Massachusetts.[17] The two state hybrids analyzed below create statewide payment areas in all but the 16 states with standard deviations above 0.034.

The Commission's recommendation includes two provisions that would revise the area definitions as analyzed here. The retention of all current statewide localities as statewide payment areas would reduce to 15 the number of states that are divided into substate areas under the two state hybrids. The provision that MSAs that cross state borders not be divided into different payment areas would affect all of the definitions analyzed except the MSA/nonmetro definition. Implementation of this provision and its impact on the recommended payment area definition is addressed in the discussion at the end of this chapter.

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[15] One obvious exception is Los Angeles county, which includes not only millions of people but covers a large geographic area. In this case, if physicians react to large intracounty price differences there could be a significant change in access to services for some residents.

[16] To determine where the high-cost tail begins, the difference between each state's standard deviation and that of the state immediately below it in Table 5-2 was calculated; the differences level off below Massachusetts. The choice of states to include as statewide was influenced somewhat by current localities; as the Commission has recommended, current statewide areas should remain as such. Another hybrid was originally investigated that only divided the first seven states in Table 5-2 but was dropped as inferior to the alternatives included.

[17] The standard deviation of the GAF in Delaware appears to be an artifact of the standard deviation calculation. Delaware has only three counties. Therefore, the degrees-of-freedom correction usually used to calculate the standard deviation leads to division of the squared deviation by two (n-1). In the analysis of payment areas, Delaware is divided into two payment areas; however, the Commission has included in its recommendation a stipulation that all current statewide areas remain statewide under the new scheme. This affects Delaware only.

Table 5-2. Within-State Variation of the County GAF for a Hypothetical Service

State	Standard Deviation	State	Standard Deviation
New York	.096	Nebraska	.029
Virginia	.074	West Virginia	.028
Illinois	.065	New Hampshire*	.027
Michigan	.062	Mississippi	.027
Maryland	.053	Tennessee*	.025
Pennsylvania	.049	South Dakota*	.025
California	.047	Iowa	.025
Delaware*	.047	Maine	.025
Florida	.044	Kentucky	.025
Georgia	.042	Vermont*	.025
Minnesota	.041	Arkansas*	.024
Louisiana	.040	Idaho	.024
Texas	.040	North Dakota*	.022
Kansas	.039	Ohio	.022
Missouri	.039	Utah*	.021
Massachusetts	.037	North Carolina	.020
Wyoming*	.034	Alabama	.020
Oklahoma	.034	Montana*	.019
New Jersey	.033	Arizona	.019
Indiana	.032	South Carolina*	.019
Connecticut	.032	Oregon	.018
Colorado*	.031	Nevada	.018
Wisconsin	.031	Rhode Island	.009
Washington	.030	District of Columbia	.000
New Mexico*	.030		

Source: CHER County File of Physician Practice Input Prices.

Note: *Indicates that state is currently a statewide locality.

The analysis of alternative payment areas is based on the GAF for each of the alternatives (Table 5-3). (By definition, the population-weighted mean of the GAF is 1.0 under each configuration.) Because of the different conversion factors that would be used under each scenario, quartile index values should be viewed as rough estimates when compared across geographic configurations.[18] (The conversion factors will not differ by more than 1 percent.) The within-index variation, however, is unaffected by the conversion factor differences, so that the ranges and quartile spreads are accurate. As expected, the MSA/nonmetro areas have the widest range in index values, from 0.86 to 1.20, while the statewide configuration has the tightest distribution, from 0.88 to 1.11.

The population-weighted mean by metro-nonmetro area shows that in all but the statewide definition metropolitan areas would, on average, receive about 2 percent over the national average, and nonmetro areas, about 7 percent less than the average (Table 5-3). (For the MSA/nonmetro definition, the nonmetro areas receive 8 percent less than the national average.) Data presented in the Commission's 1989 report to Congress suggest that a geographic index based on allowed charges under the current customary, prevailing, and reasonable (CPR) system shows that nonmetro areas currently receive about 11 percent less than the national average, while metro areas average approximately 2 percent above average (PPRC 1989). Therefore, under the Medicare Fee Schedule, all five area definitions included in this analysis would increase the average nonmetro value relative to the current CPR system.

Price Tracking

It is important that the fee schedule areas are defined with some regard to local price variation. If physician payments are not appropriately adjusted to reflect an area's prices, physicians may not be able to cover their costs in high-cost areas, which could threaten beneficiaries' ability to get health care. Conversely, if payment is higher than necessary to cover costs, the coinsurance paid by beneficiaries will be unnecessarily high.[19]

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[18] The GAF for each alternative area definition is created by calculating the population-weighted mean of the county GAFs. However, the conversion factor will be based on the distribution of service volumes. To the extent that service volumes and population are distributed differently across counties the population-weighted means that result from different groupings of counties will be associated with different budget-neutral conversion factors.

[19] It is not clear how beneficiaries' balance bill payments would be affected in this scenario. To the extent that the higher index value leads to fee levels that are closer to charges, balance bills will be smaller. However, if Medicare Fee Schedule payments are higher than necessary, the base to which the balance bill percentage limit applies will be increased.

Table 5-3. Population-Weighted Distribution of GAF for a Hypothetical Service under Alternative Fee Schedule Areas

	State	State/ MSA	State/ Category	Carrier Localities	MSA/ Nonmetro
Quartiles:					
Minimum	.88	.88	.88	.87	.86
25 percent	.94	.93	.93	.93	.93
Median	.98	.97	.97	.99	.98
75 percent	1.05	1.07	1.07	1.05	1.07
Maximum	1.11	1.20	1.17	1.18	1.20
Population-weighted mean:					
Metropolitan areas	1.01	1.02	1.02	1.02	1.02
Nonmetro areas	.96	.93	.93	.93	.92
Number of areas	49	218	100	237	361

Source: CHER County File of Physician Practice Input Prices.

Notes: Continental U.S. (excludes Alaska, Hawaii, and Puerto Rico); weighted by 1980 population. The population-weighted national average value of the GAF is 1. The GAF is for a hypothetical service, based on physician work, practice expense, and malpractice expense proportions of .542, .402, and .056, respectively.

State/MSA definition divides the 16 highest variance states into MSA/Nonmetro areas, leaving the remaining states as statewide areas. State/category definition divides these high variance states into up to five payment areas (for each state) in which counties are categorized by the following groups: 1) MSA w/population more than 3 million; 2) MSA w/population between 1 and 3 million; 3) MSA w/population between 250,000 and 1 million; 4) MSA w/population fewer than 250,000; 5) nonmetro counties.

The GAFs for the five payment areas were analyzed by CHER to determine how well each captures county-level price variation, as measured by the county-level GAF for the same hypothetical service. One measure that helps summarize each definition's ability to capture price variation is the percentage of county-level price variation captured, as measured by the R^2 (Table 5-4). As expected, the state/category definition falls between states and state/MSA. The state/category definition does nearly as well as carrier localities, with 58 percent fewer areas.

Table 5-4. Alternative Payment Areas and Their Relationship to County-Level Price Variation Using the GAF for a Hypothetical Service

Payment Area	Number of Areas	Percent of County Price Variation Captured (R^2)
State	49	69
State/Category	100	90
State/MSA	218	95
Carrier Localities	237	92
MSA/Nonmetro	361	98

Source: CHER County File of Physician Practice Input Prices.

Note: See notes in Table 5-3.

The distribution of the county-level error relative to the different payment areas shows that under the MSA/nonmetro definition, 99.4 percent of the population lives in counties where the payment area's index value is within 5 percent of the county index value (Table 5-5). Again, the state/category definition is quite similar to localities in tracking local prices, although under the state/category definition, 0.5 percent of the population lives in counties where the error exceeds 10 percent, compared with 0.2 percent under the locality definition.

Table 5-5. Distribution of Percentage Differences of County GAF from Payment Area GAF

Percentage Difference of County GAF From Payment Area GAF	-State- Number of Counties	-State- Percent National Population	-State/MSA- Number of Counties	-State/MSA- Percent National Population	-State/Category- Number of Counties	-State/Category- Percent National Population
-20 to -15%	6	0.1	0	0.0	0	0.0
-15 to -10%	112	2.7	5	0.0	6	0.5
-10 to -5%	823	9.9	202	1.3	210	1.8
-5 to 5%	1,678	74.6	2,875	97.9	2,857	95.0
5 to 10%	480	12.2	26	0.8	35	2.7
10 to 15%	8	0.3	1	0.0	1	0.0
15 to 20%	2	0.3	0	0.0	0	0.0

Percentage Difference of County GAF From Payment Area GAF	-Current Localities- Number of Counties	-Current Localities- Percent National Population	-MSA/Nonmetro- Number of Counties	-MSA/Nonmetro- Percent National Population
-20 to -15%	0	0.0	0	0.0
-15 to -10%	3	0.0	2	0.0
-10 to -5%	198	1.7	55	0.2
-5 to 5%	2,978	95.6	3,025	99.4
5 to 10%	51	2.4	26	0.4
10 to 15%	7	0.2	1	0.0
15 to 20%	1	0.0	0	0.0

Source: CHER County File of Physician Practice Input Prices.

Note: See notes in Table 5-3.

Having more payment areas results in better tracking of local prices (Tables 5-4 and 5-5). This reflects the fact that the resulting smaller areas are more homogenous with respect to prices. The exception is localities, which do a worse job of tracking local prices than the state/MSA definition, even though there are more areas under the locality definition. If capturing prices were the only criterion to consider in choosing payment areas, then the MSA/nonmetro definition would be the most attractive choice. It would capture 98 percent of county-level price variation and ensure that only 0.6 percent of the population would live in areas where the payment area index was more than 5 percent different from a county-level index.

However, smaller areas place a greater burden on the underlying data. In some areas, survey data include very few respondents and are therefore subject to random fluctuations when a respondent is not representative of the area. This could lead to inequities by creating index values that are artifacts of the small sample sizes in small MSAs and not representative of local prices. The bias could be in either direction; the index values in small MSAs could be too high or too low, relative to actual prices, depending on how the surveyed outlier compares with the community. The reliance on small samples could also be generating some of the apparent success in tracking prices, if the metro/nonmetro definition is tracking errors in the data rather than actual local prices.

Boundaries

The difference between the GAFs of two adjacent payment areas could affect physician location decisions and beneficiaries' access to care. Therefore, the payment areas should be chosen with regard to two specific issues related to boundary differentials. First, differences between adjacent areas should be minimized to the extent possible so that there is not a large differential at the border. Second, more boundaries may represent more potential problems, even if they do not have large differentials. A scheme with many unfamiliar borders, even with relatively small differences, may induce more physician relocation than one with a few borders with large differences, if these latter borders were not constructed for the purposes of physician payment (for example, state borders). These arguments suggest that payment areas should conform to some set of known geographic units. Boundaries that create apparently arbitrary divisions within a county or MSA should therefore be avoided, if possible. Of the five definitions analyzed, only localities create such within-county divisions.

Unfortunately, there is no obvious systematic way to characterize the boundary differentials under each of the five schemes. For example, it could be misleading to present the largest difference under each scheme, if the difference is in a very remote place in one definition but is between two halves of a populous MSA in another.

One insight into the boundary issue is provided by considering the MSAs that cross state lines. Since MSAs are defined to encompass economic markets, prices are generally expected to be homogenous within MSAs. Under most of the payment area definitions, MSAs that cross state boundaries are divided into separate payment areas. This leads to index value differences within an MSA, creating two fee levels within a single market area, which is the worst boundary problem possible. However, the 29 MSAs that cross state borders are special cases that can be explicitly and easily addressed under any of the schemes.[20]

Despite the fact that, conceptually, these MSAs represent the worst boundary problems (but perhaps the most easily fixed), they are a helpful vehicle for considering the broader boundary issue because they isolate the effect of each definition on the two parts of a single market area. For discussion purposes, consider the two MSAs that cross the state borders of Illinois (Table 5-6). Under a statewide system, the Illinois portion of Davenport-Rock Island has a higher value than the Iowa portion, 1.05 versus .93. This 12 percentage point difference, which is due to the fact that Illinois has more high-cost areas than Iowa, exists all along the Iowa-Illinois border. To the extent that people accept state boundaries as important, this difference may not represent much of an inducement for physician relocation. If people respect state borders as meaningful, the statewide option is clearly the best choice for overcoming issues related to boundary differences and, perhaps, complexity.

The Missouri-Illinois border has a slightly smaller difference, .96 versus 1.05. That the states are somehow more similar is reinforced by the fact that both are divided into MSA/nonmetro areas under the two state hybrids. By definition, both parts of the St. Louis MSA have the same value under the state/MSA and MSA/nonmetro definitions. However, under the state/category configuration, there is a slight difference, reflecting the index value for an MSA of St. Louis's size in each of the two states. The similarity of these two index values, .99 and 1.00, means that all of the comparably sized MSAs in the two states have essentially the same value under the state/category definition. (As a matter of fact, the Illinois portion of the St. Louis MSA is the only area in Illinois in the second population category, so it retains its MSA/nonmetro value. Clearly, since the Missouri portion's value changed, Missouri includes another MSA in this size category.)

Iowa is not divided under the two state hybrids. Under the MSA/nonmetro scheme, Davenport-Rock Island has a value of .98, so this is also its value under the state/MSA option. Clearly, Davenport-Rock Island has lower costs than the overall Illinois average since its value is below the Illinois statewide value. The difference between the Iowa and Illinois parts of the MSA is therefore reduced under the state/MSA alternative. However, the other Illinois MSAs of the same size apparently have higher costs than Davenport-Rock Island, as shown by the higher value for the Illinois portion under the state/category configuration. Under this scheme, the difference between the two parts of the MSA is nearly the same as that under the statewide definition. The locality definition has a smaller difference while, by definition, the two have the same value under the MSA/nonmetro scheme.

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[20] The Commission has concluded that each of these MSAs should have a single index value, regardless of the treatment of the states that contain them. In addition to avoiding divisions within MSAs, this revision will probably increase the two hybrids' ability to capture local price variation from that presented in Table 5-4 above.

Table 5-6. Illinois MSAs That Cross State Borders and the GAF for a Hypothetical Service

	State	State/ MSA	State/ Category	Carrier Localities	MSA/ Nonmetro
Davenport-Rock Island:					
Illinois portion	1.05	.98	1.04	.97	.98
Iowa portion	.93	.93	.93	.95	.98
St. Louis:					
Illinois portion	1.05	1.00	1.00	.99	1.00
Missouri portion	.96	1.00	.99	.99[a] .95[a] .92[a]	1.00
Nonmetro areas:					
Illinois	1.05	.95	.95	n.a.	.95
Iowa	.93	.93	.93	n.a.	.93
Missouri	.96	.92	.92	n.a.	.92

Source: CHER County File of Physician Practice Input Prices.

Notes: [a] The Missouri part of the St. Louis MSA crosses three carrier localities.

n.a. appears in the locality column for the nonmetro areas because each state has several localities that include both metro and nonmetro parts, so there is no simple accurate way to represent the various index values that would obtain under this scheme.

See notes in Table 5-3.

Perhaps the most important effect of the three definitions that create substate areas is to reduce the index difference in nonmetro areas along the Iowa-Illinois and Missouri-Illinois borders. The nonmetro areas in Illinois have a value of .95, which is quite close to Iowa's .93. By allowing some within-state index variation in high-cost states such as Illinois, these three options greatly reduce the interstate differences along nonmetro boundaries.

St. Louis illustrates the fact that current localities do not align with MSAs (or counties), even within a state. The Missouri share of the St. Louis MSA includes counties that are in three different localities. Therefore, under the current locality definition, this MSA has four different index values. The locality definition is the only one that does not respect county (and within-state MSA) boundaries and therefore presents another category of boundary issues, namely within-county differences.

As mentioned at the beginning of this section, the MSAs that cross state borders represent the most extreme type of border problem, since MSAs to some extent represent single markets. These are also easily identifiable and can be explicitly addressed. This discussion of the border MSAs is therefore meant more as a vehicle for illustrating the border issues in general rather than as an exposition about the problem of border-crossing MSAs. The resolution of this issue is discussed at the end of this chapter.

Administrative Burden and Complexity

The third criterion for analyzing the alternative payment areas is the administrative burden they pose and the ease with which carriers and physicians can understand them. Clearly, this cannot be quantified in any systematic fashion. It does not appear that the carriers would experience any extraordinary burden under any of the alternative definitions beyond the inevitable changes in data handling processes that will accompany implementation of the Medicare Fee Schedule.[21] Similarly, there is no way to assess physician and beneficiary comprehension of the alternative definitions. All four of the alternatives appear less confusing than localities because they are based on commonly understood geographic units.

Discussion

The analysis makes a strong case for replacing current localities as payment areas. Current localities do not capture local price variation as well as the state/MSA scheme, yet they involve more areas. The fact that the current localities cannot be easily characterized because their definitions differ from state to state suggests that they are at least confusing, if not complex. Moreover, they introduce border differences within counties and MSAs.

Concerns about boundary crossing and conceptual simplicity have led some to favor statewide payment areas. State areas would explain nearly 70 percent of the price variation captured by the county-level GAF (Table 5-4). Somewhat large boundary differentials at the state level may be acceptable, since states represent distinct entities with a variety of well-known differences, such as taxes and insurance. However, there is a large range of intrastate variation in county-level prices, so that the 30 percent of unexplained price variation is not spread randomly across the country but is concentrated in a few states.[22] Of the five options, statewide payment areas represent borders where price differences may be acceptable. However, this alternative ranks lowest in tracking prices. Therefore, statewide payment areas could represent another form of relocation incentive, if physicians are not able to cover their costs in higher-cost areas within states.

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[21] It is not clear how HCFA's contractual arrangements with carriers would be affected by a change in payment area definitions.

Conversely, the MSA/nonmetro option is best at capturing local prices but creates 50 percent more areas than currently exist. Some of the smaller areas in this definition may not be well represented in the survey data that underlie the GAFs. As described above, this could lead to anomalous values in these areas. It could also create border differentials that are an artifact of the small sample sizes and do not reflect local price conditions. Therefore, these border differentials could create location incentives for physicians that are not based on price differences.

The two state hybrids were developed as alternatives to the extremes represented by the state and MSA/nonmetro options. The hybrids create additional payment areas only in those states with the highest within-state price variation. The state/MSA scheme suffers from the same problems as the MSA/nonmetro definition in the states that would have substate areas, since it would rely on small samples in smaller MSAs. It creates 185 areas in the high price-variation states, for an average of over 11 areas per state in these states. Of the 218 areas defined under this scheme, 85 percent are in the 16 high price-variation states, and 15 percent are in the 33 states with statewide areas.

The state/category hybrid, with 100 areas, dramatically increases the percentage of price variation captured under statewide areas, from 69 percent to 90 percent. This hybrid leaves most states as statewide areas but divides the 15 high price-variation states into as many as five areas within a state, determined by population categories of MSAs.[23] This definition results in less than half as many payment areas as currently exist and accounts for nearly the same amount of local price variation as current localities. And since the state/category hybrid groups MSAs together, it does not create as many payment areas within each state as the state/MSA option but allows for some price variation in the high price-variation states. Further, it diminishes some of the boundary differentials created under a statewide scheme by allowing for some within-state variation. This definition is based on familiar geographic units, so it can be well understood by carriers, physicians, and beneficiaries. Since it does an acceptable job of tracking prices, does not represent any obvious boundary problems, and is clearly defined by familiar geographic units, the

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[22] The largest within-state standard deviation of the county GAF is 0.096, which is over three times the median deviation of 0.030.

[23] With the Commission's recommendation that no current statewide locality should be divided under the new payment area definition, only 15 states would be divided under the state hybrids. This is because, as explained earlier, Delaware has above-median price variation but is currently a statewide area.

Commission recommends that this state/category definition should replace current localities in determining the fee schedule payment areas.

The Commission's recommendation includes two stipulations that revise the state/category definition. The recommendation that current statewide localities should remain statewide changes the treatment of only one state, described above. The Commission has also recommended that MSAs that cross state borders should be in the same payment area, which can be accomplished in several ways.

The Commission recommends including MSAs that cross state borders in whichever state contains most of the MSA's population. For example, both the population and price data of the five Illinois counties that fall within the St. Louis MSA would be included with the data from Missouri before the GAFs were created. Analysis suggests this would have only a negligible effect on the index values of bordering states.

Payment areas that cross state borders are not new. (The suburbs of northern Virginia and southern Maryland, for instance, are currently included in the Washington, DC, charge locality.) Commission analysis of this approach suggests it is simple to implement and understand and has little effect on GAF values in other areas. In addition, it reduces the number of payment areas from 100 to 94, because some of the MSAs that cross borders are the only ones of their size in the state where less of the population is located. For example, the St. Louis MSA is the only area in Illinois in the 1 million to 3 million population category. When the entire St. Louis MSA is included with Missouri, this category no longer exists in Illinois. A complete list of the payment areas defined by the Commission recommendation, along with their three GAF components and the GAF for a hypothetical service, is presented in Table 5-7. The 29 border-crossing MSAs are listed in Table 5-8.

Table 5-7. Payment Areas as Defined by the Commission Recommendation with the Total GAF for a Hypothetical Service and the Three Components of the GAF

			Components of the GAF		
State	Population Category	Total GAF for a Hypothetical Service	Physician Work	Practice Expense	Malpractice Expense
Alabama		0.9253	0.9736	0.8738	0.8275
Arizona		1.0021	0.9866	0.9871	1.2603
Arkansas		0.8793	0.9578	0.8536	0.3036
California	Over 3 Million	1.1341	1.0636	1.1955	1.3765
	1-3 Million	1.1254	1.0518	1.1896	1.3765
	.25-1 Million	1.0721	1.0330	1.0824	1.3765
	Under .25 Million	1.0393	1.0113	1.0301	1.3765
	Nonmetro Areas	1.0137	0.9857	1.0010	1.3765
Colorado		0.9720	0.9956	0.9799	0.6862
Connecticut		1.0522	1.0156	1.0931	1.1127
Delaware		0.9986	1.0054	1.0358	0.6662
Florida	1-3 Million	1.0191	0.9832	1.0065	1.4573
	.25-1 Million	0.9673	0.9753	0.9364	1.1120
	Under .25 Million	0.9560	0.9619	0.9262	1.1120
	Nonmetro Areas	0.9310	0.9536	0.8753	1.1120
Georgia	1-3 Million	0.9785	0.9727	1.0174	0.7544
	.25-1 Million	0.9248	0.9645	0.8951	0.7544
	Under .25 Million	0.9145	0.9568	0.8799	0.7544
	Nonmetro Areas	0.8899	0.9453	0.8341	0.7544
Idaho		0.9518	0.9731	0.9314	0.8926
Illinois	Over 3 Million	1.1075	1.0329	1.1142	1.7812
	.25-1 Million	1.0350	1.0178	1.0551	1.0571
	Under .25 Million	0.9813	0.9818	0.9582	1.1421
	Nonmetro Areas	0.9521	0.9697	0.9020	1.1421
Indiana		0.9384	0.9888	0.9266	0.5353
Iowa		0.9284	0.9700	0.9086	0.6682
Kansas	.25-1 Million	0.9654	0.9848	0.9679	0.7594
	Under .25 Million	0.9418	0.9654	0.9354	0.7594
	Nonmetro Areas	0.9012	0.9524	0.8519	0.7594
Kentucky		0.9206	0.9771	0.8796	0.6692
Louisiana	1-3 Million	1.0049	0.9950	0.9912	1.1992
	.25-1 Million	0.9674	0.9935	0.9540	0.8115
	Under .25 Million	0.9442	0.9814	0.9124	0.8115
	Nonmetro Areas	0.9106	0.9680	0.8469	0.8115
Maine		0.9332	0.9515	0.9383	0.7193
Maryland	Over 3 Million	1.0987	1.0638	1.1700	0.9257
	1-3 Million	1.0243	1.0167	1.0416	0.9738
	Under .25 Million	0.9516	0.9798	0.9282	0.8465
	Nonmetro Areas	0.9542	0.9788	0.9361	0.8465
Massachusetts	Over 3 Million	1.0612	1.0095	1.1590	0.8586
	.25-1 Million	0.9909	0.9859	1.0161	0.8586
	Under .25 Million	0.9794	0.9867	0.9863	0.8586
	Nonmetro Areas	1.0182	0.9846	1.0857	0.8586
Michigan	Over 3 Million	1.1130	1.0799	1.0644	1.7822
	.25-1 Million	1.0291	1.0227	1.0011	1.2926
	Under .25 Million	0.9999	1.0132	0.9621	1.1431
	Nonmetro Areas	0.9715	0.9921	0.9197	1.1431

Table 5-7. - Continued

		Total GAF for a Hypothetical Service	Components of the GAF		
State	Population Category		Physician Work	Practice Expense	Malpractice Expense
Minnesota	1-3 Million	1.0051	1.0100	1.0340	0.7504
	.25-1 Million	0.9610	0.9909	0.9500	0.7504
	Under .25 Million	0.9517	0.9852	0.9347	0.7504
	Nonmetro Areas	0.9242	0.9715	0.8848	0.7504
Mississippi		0.8974	0.9545	0.8545	0.6532
Missouri	1-3 Million	0.9933	0.9888	0.9522	1.3313
	Under .25 Million	0.9361	0.9610	0.8683	1.1831
	Nonmetro Areas	0.9158	0.9493	0.8333	1.1831
Montana		0.9403	0.9691	0.9319	0.7213
Nebraska		0.9005	0.9575	0.8881	0.4368
Nevada		1.0443	1.0111	1.0744	1.1491
New Hampshire		0.9719	0.9688	1.0273	0.6041
New Jersey		1.0850	1.0395	1.1361	1.1581
New Mexico		0.9507	0.9803	0.9358	0.7704
New York	Over 3 Million	1.1652	1.0331	1.2455	1.8684
	1-3 Million	1.1351	1.0649	1.1359	1.8098
	.25-1 Million	0.9975	1.0095	0.9778	1.0219
	Under .25 Million	1.0067	1.0196	0.9947	0.9678
	Nonmetro Areas	0.9558	0.9783	0.9239	0.9678
North Carolina		0.8998	0.9606	0.8904	0.3787
North Dakota		0.9188	0.9614	0.8931	0.6913
Ohio		0.9707	0.9917	0.9487	0.9247
Oklahoma		0.9189	0.9703	0.9056	0.5179
Oregon		0.9932	0.9883	1.0050	0.9547
Pennsylvania	Over 3 Million	1.0698	1.0143	1.0496	1.7522
	1-3 Million	0.9879	1.0108	0.9489	1.0459
	.25-1 Million	0.9718	0.9859	0.9581	0.9337
	Under .25 Million	0.9643	0.9843	0.9417	0.9337
	Nonmetro Areas	0.9523	0.9804	0.9169	0.9337
Rhode Island		0.9891	0.9949	1.0164	0.7373
South Carolina		0.8988	0.9636	0.8740	0.4498
South Dakota		0.8931	0.9447	0.8517	0.6903
Tennessee		0.9064	0.9670	0.8940	0.4087
Texas	1-3 Million	0.9725	1.0039	0.9851	0.5782
	.25-1 Million	0.9349	0.9774	0.9373	0.5059
	Under .25 Million	0.9222	0.9772	0.9064	0.5032
	Nonmetro Areas	0.8856	0.9591	0.8483	0.4428
Utah		0.9588	0.9850	0.9536	0.7423
Vermont		0.9300	0.9523	0.9548	0.5350
Virginia	1-3 Million	0.9440	0.9761	0.9536	0.5648
	.25-1 Million	0.9273	0.9755	0.9173	0.5330
	Under .25 Million	0.9162	0.9604	0.9101	0.5330
	Nonmetro Areas	0.9028	0.9599	0.8772	0.5330
Washington		1.0183	1.0200	1.0091	1.0689
West Virginia		0.9327	0.9779	0.9055	0.6913
Wisconsin		0.9517	0.9877	0.9467	0.6382
Wyoming		0.9542	0.9915	0.9473	0.6432

Source: CHER County File of Physician Practice Input Prices.

Notes: The GAF for a hypothetical service reflects price shares for physician work, practice expense, and malpractice expense of .542, .402, and .056.

Washington, DC is included in the Maryland, over 3 million, category.

Table 5-8. MSAs that Cross State Borders

Allentown-Bethlehem, PA - NJ
Augusta, GA - SC
Charlotte-Gastonia-Rock Hill, NC - SC
Chattanooga, TN - GA
Cincinnati, OH - KY - IN
Clarksville-Hopkinsville, TN - KY
Columbus, GA - AL
Cumberland, MD - WV
Davenport-Rock Island-Moline, IL - IA
Duluth, MN - WI
Evansville, IN - KY
Fargo - Moorhead, ND - MN
Fort Smith, AR - OK
Huntington-Ashland, WV - KY - OH
Johnson City-Kingsport-Bristol, TN - VA
Kansas City, MO - KS
Louisville, KY - IN
Memphis, TN - AR - MS
Minneapolis-St. Paul, MN - WI
Omaha, NE - IA
Parkersburg-Marietta, WV - OH
Philadelphia, PA-NJ
Sioux City, IA - NE
St. Louis, MO - IL
Steubenville-Weirton, OH - WV
Texarkana, TX - Texarkana, AR
Washington, MD - DC - VA
Wheeling, WV - OH
Wilmington, DE - NJ - MD

Note: State that includes the largest percentage of MSA population is listed first.

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CHAPTER 6

FEE SCHEDULE CONVERSION FACTOR

The Omnibus Budget Reconciliation Act of 1989 (OBRA89) requires that the initial year's implementation of the Medicare Fee Schedule be accomplished in a budget-neutral manner. Projected outlays under the new payment system in 1992 must match outlays that would have occurred in that year under the existing system. The Secretary of Health and Human Services is required to adjust the Medicare Fee Schedule conversion factor in order to achieve this end. This chapter discusses several policy issues surrounding the calibration of the conversion factor for 1992.

RECOMMENDATION

In order to anticipate volume changes in response to the implementation of the Medicare Fee Schedule in 1992, the Commission recommends a fee reduction of 1 percent. Any difference between this assumption and actual experience should be addressed through the Medicare Volume Performance Standard (VPS).

The first section of this chapter describes the mechanics of the budget-neutrality calculation. OBRA89 specifies the transition from the current payment system to the Medicare Fee Schedule. Payment in 1992 will be a mixture of old and new payment rates, with an overall budget-neutrality requirement. Numerical examples in this section help to clarify the calculations for 1992.

The second section of this chapter examines the volume offset. If volume is assumed to change due to the new payment rates, the Medicare Fee Schedule conversion factor must be adjusted accordingly. This section of the chapter reviews the available evidence on the volume response to payment rates and explains the Commission's recommendation on a reasonable volume offset to be used in setting 1992 payment rates.

The final section of this chapter considers the implications of the OBRA89 transition rules for expenditures after 1992. Achieving budget neutrality by adjusting the Medicare Fee

Schedule conversion factor will result in fee reductions in later years. The VPS process should be used to monitor and modify the level of outlays after 1992.

MECHANICS OF THE CALCULATION FOR BUDGET NEUTRALITY

Beginning January 1, 1992, the current customary, prevailing, and reasonable (CPR) system of charge limits will be replaced by a fee schedule. At that time, all physicians in a charge locality performing a given service will be paid the same fee. Specialty differentials will be eliminated, and customary charges will no longer matter.[1]

The 1992 payment rates will be a complex mix of the old CPR system and the new Medicare Fee Schedule. First, the multiple CPR payment rates for each service must be averaged to produce a single historical payment rate for each service within each locality. This single rate is defined by OBRA89 as the adjusted historical payment basis (AHPB). The AHPB is essentially the 1991 Medicare average allowed charge, updated to 1992. Next, for each service within each locality, the AHPB rate will be mixed with the Medicare Fee Schedule rate. A service whose AHPB differs from the Medicare Fee Schedule by less than 15 percent will be paid at the fee schedule rate. A service whose AHPB differs from the Medicare Fee Schedule by more than 15 percent will be adjusted by 15 percent of the fee schedule amount.[2]

Once the 1992 rates are established, the transition becomes simpler. Payment rates between 1993 and 1996 move away from the 1992 levels toward the Medicare Fee Schedule amounts. Payments in 1993, 1994, and 1995 will consist of increasing proportions of fee schedule rates and decreasing proportions of the 1992 rates. Finally, payment in 1996 will be based entirely on the Medicare Fee Schedule.

1992 Budget Neutrality and the Conversion Factor

OBRA89 calls for the 1992 implementation of payment reform to be budget-neutral. Payment rates must be set so that outlays under the new system match the level of expenditures projected to have occurred under the old system in that year. Specifically, OBRA89 requires the Secretary to estimate actual 1991 outlays. Then, the Secretary must establish new payment rates that would have resulted in the same outlays had those new rates been in effect in 1991. Payment rates for 1992 will then be these budget-neutral 1991 rates, updated through the VPS mechanism.[3]

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[1] Some payment differentials will remain, including the 5 percent differential for participating physicians, a 10 percent differential for Health Professional Shortage Areas, and up to a 20 percent reduction in limiting charges for new physicians. In addition, any services billed below the fee schedule amount will be paid at the billed charge.

[2] An important aspect of the 1992 transition is that fees for undervalued services rise faster than fees for overvalued services fall. For example, a service with an AHPB of $50 and a fee schedule payment of $100 will be paid at $65 ($50 plus 15 percent of $100), a 30 percent increase. A service with an AHPB of $200 and a fee schedule payment of $100 will be paid at $185 ($200 less 15 percent of $100), a 7.5 percent decrease.

OBRA89 specifies that 1992 budget neutrality must be achieved by adjusting the conversion factor for the Medicare Fee Schedule. The Medicare Fee Schedule establishes payment across services and localities relative to one another. Once relative values are in place, the conversion factor determines the dollar value of each relative value unit in the fee schedule. By contrast, the AHPB is itself a dollar amount and requires no conversion factor.

If payment were based on the Medicare Fee Schedule alone, calculation of the conversion factor would be straightforward. The budget-neutral conversion factor would simply divide total 1991 outlays by the total relative value units implied by the Medicare Fee Schedule (Table 6-1, Part C).

However, two principal factors require an adjustment to this simple calculation. First, the mixing of the Medicare Fee Schedule with the AHPB may disturb budget neutrality (Table 6-1, Part D). Mixing may increase payments to undervalued services to a greater extent than it reduces payments to overvalued services, raising total outlays above the budget-neutral level. Second, increased volume in response to fee changes might also elevate payments above the budget-neutral level (Table 6-2). In both cases, the conversion factor must fall to bring outlays down to the budget-neutral level.

THE VOLUME OFFSET

The Secretary's assumption of a volume offset for 1992 may have a substantial impact on the 1992 fee schedule conversion factor.[4] The Secretary traditionally has assumed that fee cuts result in volume increases. Unless the symmetric assumption is made that fee increases will result in volume reductions, volume would be expected to increase in response to the 1992 fee changes. This will require a reduction in the fee schedule conversion factor in order to maintain budget neutrality. The larger the volume (or behavioral) offset assumed, the steeper must be the cut in the conversion factor.

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[3] By May 15, 1991, the Commission is to make a recommendation to the Congress on the update for 1992.

[4] The 1992 volume offset decision will also result in fee changes during later years of the transition. These post-1992 effects of the volume offset are discussed in the last section of the chapter.

Table 6-1. An Example of the 1992 Budget Neutrality Calculation

HCPCS Code	1991 Volume	1991 AHPB	1991 Outlays
Part A: Existing Payment Rates (the AHPB)			
11111	15	$100	$1,500
22222	30	150	4,500
33333	5	300	1,500
Total			7,500

HCPCS Code	1991 Volume	MFS Relative Values	Total RVUs
Part B: Relative Values Under the Medicare Fee Schedule (MFS)			
11111	15	1.00	15
22222	30	1.00	30
33333	5	1.00	5
Total			50

HCPCS Code	1991 Volume	MFS Relative Values	Conversion Factor For MFS Alone	Payment Based On MFS Alone	Total Outlays
Part C: Budget Neutrality for the Medicare Fee Schedule Alone					
11111	15	1.00	$150.00	$150.00	$2,250
22222	30	1.00	150.00	150.00	4,500
33333	5	1.00	150.00	150.00	750
Total					7,500

Conversion Factor = $7500/50 RVUs = $150/RVU

HCPCS Code	1991 Volume	1991 AHPB	Unadjusted MFS Value	Mixed Rate	Outlays Before Adjustment
Part D: Mixing the AHPB with the Unadjusted Medicare Fee Schedule Rates					
11111	15	$100	$150.00	$122.50	$1,838
22222	30	150	150.00	150.00	4,500
33333	5	300	150.00	277.50	1,388
Total					7,725

HCPCS Code	1991 Volume	1991 AHPB	Adjusted MFS Value	Mixed Rate	Outlays After Adjustment
Part E: Budget Neutrality for the Mixed Rates					
11111	15	$100	$142.85	$121.43	$1,821
22222	30	150	142.85	142.85	4,286
33333	5	300	142.85	278.57	1,393
Total					7,500

Conversion Factor = $142.85

Source: PPRC.

Table 6-2. An Example of the Impact of a Volume Offset

HCPCS Code	1991 Volume	1991 AHPB	MFS Value	Mixed Rate	Outlays
Part A: Final Rates from Table 6-1					
11111	15	$100	$142.85	$121.43	$1,821
22222	30	150	142.85	142.85	4,286
33333	5	300	142.85	278.57	1,393
Total					**7,500**

HCPCS Code	Projected 1991 Volume	1991 AHPB	Old MFS Value	Old Mixed Rate	Outlays Before Adjustment for Volume Offset
Part B: Assume that Volume will Rise 2%					
11111	15.3	$100	$142.85	$121.43	$1,858
22222	30.6	150	142.85	142.85	4,371
33333	5.1	300	142.85	278.57	1,421
Total					**7,650**

HCPCS Code	Projected 1991 Volume	1991 AHPB	New MFS Value	New Mixed Rate	Outlays After Adjustment for Volume Offset
Part C: Budget-Neutrality with a Volume Offset					
11111	15.3	$100	$138.20	$120.73	$1,847
22222	30.6	150	138.20	138.20	4,229
33333	5.1	300	138.20	279.27	1,424
Total					**7,500**
Conversion Factor = $138.20					

Source: PPRC.

This portion of the chapter analyzes the issues involved in the volume offset decision. The first section notes the sources of fee changes that will occur in 1992. The second section examines the volume offsets traditionally used by the Health Care Financing Administration (HCFA) and the Congressional Budget Office (CBO). The third section looks at the historical evidence on volume offsets and the relevance of that evidence to the decision for 1992. Finally, the effects of various offset assumptions are simulated, and the Commission's recommendation is explained.

Substantial Fee Changes in 1992

Several factors will lead to substantial changes in Medicare fees to individual physicians in 1992. First, all physicians will be paid on a fee schedule, that is, identically.[5] Physicians who currently are paid above the AHPB may see revenue decreases, while those paid below the AHPB may see increases.[6] Second, the Medicare Fee Schedule realigns relative fees in favor of evaluation and management (EM) services and against procedures. Physicians specializing in procedures will see revenues fall. Finally, the Medicare Fee Schedule will redistribute payments across geographic areas based on the costs of inputs to medical practice.

In addition to changes in the allowed amounts, physicians' revenues will change due to tighter limits on balance billing. Balance billing limits are being phased in beginning January 1, 1991. In 1991, balance billing will be limited to 25 percent of the prevailing charge for non-EM services and to 40 percent of the prevailing charge for EM services. Physicians whose maximum allowable actual charge (MAAC) would be lower than that amount are still capped at their own MAACs. In 1992, the balance billing limit falls to the lesser of 20 percent of the prevailing charge or the physician's own MAAC. In 1993 and thereafter, balance billing is limited to 15 percent of the prevailing charge, with MAACs fully phased out.[7]

These substantial changes in fees may result in changes in the volume of services. Changes in the various charge limits will modify both beneficiary out-of-pocket costs and physician revenue per service. These, in turn, may affect the willingness of beneficiaries to seek care and the readiness of physicians to supply that care, possibly resulting in alterations in the amount of care provided.

HCFA and CBO Volume Offset Assumptions

Currently, both HCFA and CBO assume that increases in the volume of services provided by physicians will offset 50 percent of the savings from fee reductions. Before 1985, CBO budget projections were made under the assumption that 30 percent of cost savings would be offset by volume increases (Christensen 1990). The HCFA Office of the Actuary (OACT) developed the 50 percent volume offset through experience with the Medicare data rather than through formal statistical analyses. However, both HCFA and CBO believe that an assumption of a 50 percent volume offset increases the accuracy of outlay projections.

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[5] Except for those differentials noted above.

[6] For example, physicians with customary charges significantly below the prevailing might see an increase, while those paid at the prevailing might see a decrease.

[7] Due to the 5 percent differential for participating physicians, the balance billing percentage limits will be applied to 95 percent of the full fee schedule amount.

The HCFA OACT has applied the 50 percent offset assumption consistently in its outlay projections. In most instances, the offset assumption reduced the estimated savings from fee reductions and so required deeper fee cuts to achieve targeted savings. Thus, the use of the volume offset may have led to more stringent payment policy. In other cases, however, the inclusion of an offset in actuarial calculations may have led to less stringent policy. In particular, the 50 percent offset increased the FY 1991 VPS.[8] This may eventually lead to higher fee updates.

In the Model Fee Schedule (*Federal Register* 1990), however, HCFA notes that the volume offset traditionally assumed for budget projections may not be appropriate for the 1992 budget-neutrality calculation. The OACT's previous use of a volume offset has been an aggregate rule applied to estimates of across-the-board savings. By contrast, the 1992 changes will involve both increases and decreases in fees, many of which will be larger than any recent changes in Medicare payment rates. HCFA has not yet decided on the volume offset it will use in calculating 1992 payment rates.

Evidence on the Response of Volume to Medicare Fee Changes

The empirical evidence on the response of volume to changes in Medicare fees is somewhat limited. Studies of changes in outlays over time are most relevant to determining the 1992 volume offset. Five time-series studies of total outlays or practice-level outlays show a substantial increase in volume in response to fee reductions. Cross-sectional studies and studies of individual procedures are less relevant to implementation of the fee schedule, and studies of this nature show much more mixed results. This section summarizes the evidence on the response of volume to fee changes and assesses the relevance of that evidence to the volume offset decision. Review of the findings from the individual studies is given in Appendix A.

The 1988 Medicare fee reductions for overvalued procedures (directed by OBRA87) provide a unique opportunity for Commission staff to study the impact of fee cuts on the volume of services (Table 6-3). To analyze the impact of these cuts, two years of Part B Medicare Annual Data (BMAD) summary files were merged, and the percentage change from 1987 to 1988 in the level of fees and volume for each specialty within each carrier area were calculated. After adjusting for cross-carrier and cross-specialty differences in volume growth, the impact of fee changes on the total volume of all services was estimated for the specialties most heavily affected by the OBRA87 overvalued procedure cuts.

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[8] Congress directed HCFA to establish the FY 1991 VPS two percentage points below projected outlays, including the effects of the substantial fee cuts in OBRA90. By assuming a volume response to those fee cuts, the OACT's outlay projections and hence the VPS were increased.

Table 6-3. Analysis of the Volume Response to OBRA87 Overvalued Procedure Fee Cuts

Specialty and Percent of Charges in OBRA87 Overvalued Procedures	Number of Observations	Volume Offset (1=100%)	T-Statistic
Top Five Specialties	**248**	**0.56**	**2.812****
Ophthalmology (51%)	53	0.14	0.30
Thoracic Surgery (48%)	47	0.68	2.24**
Urology (32%)	53	0.77	2.17**
Orthopedic Surgery (29%)	53	0.94	3.00**
Gastroenterology (23%)	42	-0.76	-1.47

Source: PPRC analysis of 1987 and 1988 Medicare BMAD procedure files.

Note: The volume offset is the increase in volume resulting from a reduction in fee levels.

Fees and volume refer to all procedures performed by the indicated specialties, not just the overvalued procedures.

The unit of analysis is the specialty within the Part B carrier. Volume changes were adjusted for carrier and specialty effects.

**Signifies coefficients statistically significantly different from zero at least the 5 percent level.

Results show that each percentage point reduction in fees resulted in a 0.56 percentage point increase in volume, roughly in line with the OACT's traditional assumption of a 50 percent behavioral offset.

Other time-series studies of total outlays also suggest the presence of a volume offset. The four studies reviewed in Appendix A[9] all reported increases in volume in response to Medicare fee freezes or cuts.

Cross-sectional analyses and examinations of individual procedures are probably less relevant to setting a volume offset. Four such studies reveal no consistent impact of fees on volume.[10] Fee differentials were sometimes associated with higher, lower, or equal rates of use of individual procedures.

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[9] Christensen 1990; Mitchell and others 1989; Rice 1984; Holahan and Scanlon 1979

It is not surprising that analyses of individual procedures show mixed results. First, the volume of an individual procedure within a small area is often quite volatile and is affected by changes in individual technologies. Second, procedures vary in the degree to which they are discretionary. For example, the volume of fracture reductions may not be very responsive to fee cuts, while the volume of noninvasive tests may well be. Third, fee cuts may result in "spillovers" as physicians offset fee reductions in one area with volume increases in another.[11] Studies of individual procedures do not capture such spillovers. Finally, fee cuts may not change a physician's incentives to perform an individual procedure. Even after a modest fee reduction, an overvalued procedure may remain the most remunerative in a physician's practice.

The results of all the time-series studies suggest that the volume of services will respond to fee changes. However, the magnitude of that response is still quite uncertain. Only one study (Christensen 1990) explicitly examined increases in fees, and that study used data from the mid-1970s from a single state. The others have examined changes in aggregate volume. Results from these studies may reflect both fee impacts and other concurrent changes such as the shift of services to outpatient settings or changes in overall economic activity.

Additional aspects of the 1992 payment changes add further uncertainty to the magnitude of the volume response. First, the 1992 changes follow a long series of fee freezes, low fee updates, and reductions in fees for overvalued procedures. The volume response at the end of such a period might be quite different from the volume response observed historically. Second, the fee changes in 1992 will often be quite large relative to previous fee changes. It is not clear that the volume response will be proportionate to fee changes for both large and small fee changes. Finally, even if an accurate estimate were available for the response of volume to fee cuts, this would tell little about the symmetry of responses to increases and decreases in fees.[12]

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[10] Escarce, 1991; Holahan and others 1990; Reynolds 1990; Escarce 1990

[11] Rice (1984), for example, found that reductions in fees for medical services resulted in increased volume of both medical and surgical services.

[12] Except for changes in balance billing limitations, budget neutrality implies that the practices gaining revenue should roughly offset the practices losing revenue. Thus, except for the overall loss of physician income due to balance billing restrictions, an assumption of symmetry of response (volume falls for "winners" to the same degree that volume increases for "losers") would lead to only a very small net adjustment.

Finally, the potential for changes in other sources of physician revenue adds further uncertainty. First, balance billing and assignment behavior may change over this period. On the one hand, balance billing limits will be tightened in 1992. That may reduce aggregate billings and exacerbate any volume response. On the other hand, physicians may take fewer claims on assignment in response to reductions in practice revenues. That would partially offset lost revenue and therefore lessen the impact of fee reductions on volume. Second, physicians may be able to compensate for Medicare revenue reductions with increased billings to non-Medicare patients. The net effect of these changes is difficult to predict and adds uncertainty to the estimate of the 1992 volume offset.

Simulations of the Impact of Alternative Volume Offset Assumptions

Two different behavioral response assumptions have been discussed in the context of establishing the 1992 conversion factor. The first is that physician practices will increase volume to make up half of the losses associated with any payment reductions but will not reduce volume to offset payment increases.[13] An alternative assumption is that half of any losses and 35 percent of any gains will be offset by volume changes.[14]

Commission staff used revenue projections for a 1 percent sample of physician practices to estimate the change in revenues that would occur between 1991 and 1992. These practice-level revenue changes were, in turn, used to estimate the degree to which fee levels would have to be reduced to maintain budget neutrality under various volume offset assumptions.

The assumption that half of any losses and no part of any gains (50/0) would be offset by volume changes would require a 3.3 percent reduction in fee levels in order to maintain budget neutrality in 1992. However, the assumption that half of losses and 35 percent of gains were offset (50/35) would lead to only a 1.2 percent reduction in fees to maintain 1992 budget neutrality (Table 6-4).[15]

These offsets capture only the volume response to the first year's implementation of the fee schedule. If the full fee schedule were to be implemented all at once, the total change in volume would require a fee reduction of 8.0 percent (under the 50/0 assumption) or 3.1

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[13] This differs from the HCFA OACT's traditional assumption that 50 percent of any net fee reductions will be offset. For example, this approach could yield a positive volume offset even if "winners" exactly offset "losers" and the net fee reduction were zero.

[14] CBO research (Christensen 1990) supports this latter assumption.

[15] These estimated fee reductions include the volume response resulting from the fee reductions themselves. However, balance billing is not included. Commission analysis tentatively suggests that the 1992 balance billing constraints should have only a small effect on these volume offset estimates.

percent (under the 50/35 assumption). This means that the 1992 volume response is just over one-third of the total (1991 through 1996) volume response that might occur solely due to the shift to the Medicare Fee Schedule.[16]

Table 6-4. Estimated Fee Reductions to Maintain Budget Neutrality Under Two Volume Offset Assumptions

Offset Assumption	1991 Versus 1992 Rates	1991 Versus Full Medicare Fee Schedule
Offset 50% of Losses Offset 0% of Gains	3.3%	8.0%
Offset 50% of Losses Offset 35% of Gains	1.2%	3.1%

Source: PPRC simulations using 1988 Medicare BMAD provider file data aged to 1991.

Note: This simulation does not include balance billing amounts. Full Medicare Fee Schedule simulation does not include the additional fee reductions that may occur during the transition to the fee schedule specified in OBRA89.

Considerations and Recommendation

In principle, the difference between a large or small volume offset coupled with the VPS is who should bear the risk of surpluses or shortfalls during the transition. If a volume offset enters into the 1992 conversion factor, fees are reduced immediately. If the presumed volume growth does not appear, physicians would have been paid too little, but later fee updates would be higher than they would be otherwise. If volume offsets are not used, fees are not reduced immediately. If the presumed volume growth does occur, physicians would be paid too much, but later fee updates would be lower than they would be otherwise.[17]

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[16] These estimates are for a strictly budget-neutral transition to the fee schedule. The last section of the chapter demonstrates that fees may fall during the actual transition to the fee schedule. The volume response to these additional fee reductions is not included in these estimates.

Either a withhold system or a more timely VPS process could reduce the risks of underpayment or overpayment. Under a withhold system, some portion of payments would be made only after a final accounting of the actual increase in volume. This would allow for a retrospective assessment of the true volume response. Alternatively, the two-year lag inherent in the current VPS process could be shortened. A modified VPS based on quarterly data might substantially reduce the time between volume changes and fee updates.

The Commission plans to consult with HCFA concerning the feasibility of either a withhold system or a quarterly VPS process as future modifications to the physician payment system. In the past, lags in the processing of claims and payment records were the major impediments to more rapid fee adjustment. However, with the Common Working File and the direct submission of all claims by physicians, expenditure and utilization data may be available on a more timely basis. This may result in a much shorter lag between volume changes and fee updates.

For the present, though, the annual VPS is the only alternative to the volume offset for adjusting fees in response to volume growth. One argument for using the VPS is that the volume response is not a predetermined constant whose magnitude depends solely on technical factors. Instead, the volume offset depends upon the behavior of physicians. To the extent that the medical profession will act to limit "gaming" of the payment changes, the volume offset will fall. Such positive collective behavior is what the VPS was intended to encourage.

In the Model Fee Schedule (*Federal Register* 1990), HCFA offers some objections to the use of the VPS to replace the volume offset. First, the VPS default formulas can reduce fees by no more than 2 percent or 3 percent, so that large volume increases would not be fully offset.[18] Second, because the VPS works with a lag, total payments will exceed the budget-neutral amount for at least two years. Finally, the VPS was intended to encourage physicians to slow volume growth and may not be an appropriate tool for an essentially technical budget-neutrality adjustment.

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[17] There is a minor complication here. The default VPS formula is based on a five-year average of past volume growth. A jump in volume growth due to payment changes will eventually raise the VPS defaults slightly in later years. This occurs under the defaults whether or not a volume offset is used in setting 1992 payment rates. Thus, it is not exactly true that the 1992 volume response will have no long-run impact on expenditures.

[18] The VPS targets do not cumulate from year to year. Each year's target applies to expenditure growth for that year.

On the other hand, the Congress has indicated that it does not intend to allow the default formulas to determine the VPS. As it did for the 1991 VPS, the Congress plans to exercise its judgment concerning the appropriate rate of growth of outlays and the concomitant fee update. Both the Commission and the Secretary have wide latitude in setting their recommendations, while the Congress' decision may be based on still other criteria. An exact linkage between 1992 budget neutrality and the VPS is difficult to specify if the defaults are not used. Nevertheless, the Congress may use the VPS to address perceived problems with the level of outlays.

The Commission recommends that a volume offset amounting to a 1 percent reduction in fees be included in the 1992 budget-neutrality calculation. Analyses of expenditure changes suggest that some volume response is likely. However, the size of the fee changes in 1992, the presence of large increases in fees, and the potential for changes in assignment behavior all add uncertainty to the actual 1992 offset. In this situation, it seems sensible to use a lower figure than that suggested by the 50/0 offset assumption. The smaller offset recommended here provides some protection against overly high Medicare outlays without unduly penalizing physicians. Additional changes in volume will eventually be dealt with through the VPS.

FEE LEVELS DURING LATER YEARS OF THE TRANSITION

The OBRA89 transition to the fee schedule will affect the level of fees after 1992. The law requires fees to be budget-neutral only in 1992, not in later years. Fees in 1992 will be a mixture of the existing rates (the AHPB) and the Medicare Fee Schedule. However, all adjustment for 1992 budget neutrality must be done through the fee schedule conversion factor. No change is made in the AHPB. As a result, the fee schedule conversion factor must overadjust to achieve budget neutrality. This lower starting base for the Medicare Fee Schedule results in lower payments in future years.

There are two fundamental reasons that the transition to the fee schedule specified by OBRA89 affects fees in later years. First, the transition is asymmetric in 1992. Payments for undervalued services will rise to a greater extent than payments for overvalued services will fall. This would increase the average level of fees in 1992 unless the fee schedule conversion factor is reduced (Table 6-1). Second, Commission simulations indicate that the conversion factor must fall by roughly 3 percent for every 1 percent reduction in outlays. This occurs because the conversion factor affects only part of 1992 outlays, with the remainder being determined by the historical average charges (the AHPB). Anything requiring a reduction in 1992 fees, such as a volume offset (Table 6-2), will lead to an even larger reduction in the fee schedule conversion factor.

These two factors lead to fee reductions in later years, as shown in the example in (Table 6-5). In 1992, payments are a mixture of the AHPB and the Medicare Fee Schedule. By 1996, however, fees are based entirely on the fee schedule. The three-to-one over-adjustment of the conversion factor, coupled with the asymmetry of the transition in 1992 and the volume offset, means that fees and payments in 1996 fall below what they would have been if OBRA89 had specified an immediate and full implementation of the fee schedule.[19]

Finally, the Medicare VPS default formula may not counteract the fall in fees after 1992. The VPS default formula sets a target rate of expenditure growth by combining projected fee increases with past trends in volume growth. The lower fees implicit in the OBRA89 transition will enter directly into the VPS defaults, resulting in a lower VPS target.[20] However, the volume component of the default formula simply follows prior trends. The net effect is that the VPS defaults need not result in the higher update needed to maintain fees at their 1992 levels.[21]

Estimate of Magnitude of Effect

The cumulative impact on fees of the adjustments for asymmetry and the volume offset may be quite large in later years of the transition (Table 6-6). Commission analyses indicate that 1996 fees might fall more than 15 percent if the 50/0 volume offset assumption is used and more than 9 percent using the 50/35 offset assumption.[22]

This simulation ignores many factors that could substantially alter the level of fees and outlays during the transition. First, for simplicity it has been assumed that no fee updates occur over this period and that the VPS has not affected fee levels. Second, the conversion factor and, therefore, fees depend upon many other considerations not included here.[23] Finally, the simulations are meant to depict solely the impact of the OBRA89 transition and ignore any unexpected or secular changes in the volume of services.

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[19] This is illustrated in Table 6-5. To simplify the illustration, it has been assumed that no fee updates occur.

[20] A similar phenomenon occurred in the 1991 VPS. The substantial fee cuts mandated by OBRA90 fed directly into the very low VPS for 1991.

[21] This paragraph applies to the impact of the 1992 adjustment to the conversion factor, not to the subsequent volume growth itself. The VPS can eventually (within limits) adjust for the volume growth itself.

[22] The impact on outlays is much smaller if volume increases occur as projected. Outlays would be reduced 5.0 percent or 3.6 percent for the 50/0 and 50/35 volume responses, respectively.

[23] For example, visit coding and surgical global service definitions will change in 1992, and the proportion of bills paid at the billed amount may also change. The initial conversion factor will be based on the Secretary's assumptions about these factors as well as the volume offset.

Table 6-5. An Example of the Impact of OBRA89 on Post-1992 Fee Levels

HCPCS Code	Volume	AHPB	MFS Value	1992 Rate	1992 Outlays
Part A: 1992 Payment Rates from Table 6-2					
11111	15.3	$100	$138.20	$120.73	$1,847
22222	30.6	150	138.20	138.20	4,229
33333	5.1	300	138.20	279.27	1,424
Total					7,500

HCPCS Code	Volume	1992 Payment	MFS Value	1993 Rate	1993 Outlays
Part B: Updated to 1993					
11111	15.3	$120.73	$138.20	$125.10	$1,914
22222	30.6	138.20	138.20	138.20	4,229
33333	5.1	279.27	138.20	244.00	1,244
Total					7,387

HCPCS Code	Volume	1992 Payment	MFS Value	1994 Rate	1994 Outlays
Part C: Updated to 1994					
11111	15.3	$120.73	$138.20	$126.50	$1,935
22222	30.6	138.20	138.20	138.20	4,229
33333	5.1	279.27	138.20	232.72	1,187
Total					7,351

HCPCS Code	Volume	1992 Payment	MFS Value	1995 Rate	1995 Outlays
Part D: Updated to 1995					
11111	15.3	$120.73	$138.20	$129.47	$1,981
22222	30.6	138.20	138.20	138.20	4,229
33333	5.1	279.27	138.20	208.73	1,065
Total					7,274

HCPCS Code	Volume	1992 Payment	MFS Value	1996 Rate	1996 Outlays
Part E: Updated to 1996					
11111	15.3	$120.73	$138.20	$138.20	$2,114
22222	30.6	138.20	138.20	138.20	4,229
33333	5.1	279.27	138.20	138.20	705
Total					7,048

Source: PPRC.

Note: This example assumes that no fee updates occur over this period.

Table 6-6. Impact of OBRA89 Transition Rules on 1996 Fee Levels and 1996 Outlays

	Fee Levels	Outlays
No Blending No Offset	0%	0%
Blending No Offset	-6%	-6%
Blending 50/35 Offset	-9.4%	-3.6%
Blending 50/0 Offset	-15.2%	-5.0%

Source: PPRC simulations using 1988 BMAD provider and procedure files aged to 1991.

Notes: Outlay estimates include the volume responses shown in the first column.

The simulation assumes that no fee updates occur and that there is no interaction with the VPS process.

Considerations and Recommendation

Several factors argue against recommending changes in the OBRA89 transition to the Medicare Fee Schedule. First, OBRA89 calls for budget neutrality only in 1992. The law does not rule out deviations from budget neutrality in later years of the transition. Second, any proposal that eliminates these post-1992 fee reductions would raise Medicare outlays relative to current law. Under current budget rules, recommendations for increased Part B outlays must be funded by reductions in other domestic expenditures.

However, there are other factors to be considered. It is unlikely that the size of the post-1992 fee reductions was known with accuracy when the legislation was passed. The simulations presented here indicate that the OBRA89 transition may result in substantial reductions in fees between 1992 and 1996. Such large fee reductions may not have been anticipated, and the potential consequences of those fee reductions may not have been fully considered.

Even without the change to the Medicare Fee Schedule, there is always a high degree of uncertainty surrounding any projections of Part B fees or outlays. Fee levels and outlays depend upon the behavior of physicians and beneficiaries, the development and diffusion of new technologies, and a host of other factors. This uncertainty is heightened by the transition to the Medicare Fee Schedule, during which numerous aspects of the payment structure will change.

With this in mind, the Commission makes no recommendation for changes in the OBRA89 legislation. Instead, the uncertainty of future outlays underscores the importance of exercising judgment in setting the fee level each year from 1992 to 1996 instead of relying on the default update formulas. Rather than recommend a change in the legislation, the Commission will consider the effects of these fee reductions when making its annual recommendations to the Congress on the VPS and fee updates.

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CHAPTER 7

ENSURING BENEFICIARY FINANCIAL PROTECTION AND ACCESS TO CARE

Assessing the impact of policy changes on beneficiaries' financial liability and access to medical care has been an integral part of the Commission's analysis and recommendations since it established goals for payment reform at its first meeting in 1986. This chapter reflects the Commission's continuing concern about these issues as implementation of the Medicare Fee Schedule, charge limits, and the system of Volume Performance Standards (VPS) proceeds. It begins by considering the impact of the Omnibus Budget Reconciliation Acts of 1989 and 1990 (OBRA89 and OBRA90) on beneficiaries. State actions providing additional protection to beneficiaries are also reviewed.

The second section considers the Commission's initial plans for monitoring access to care under the new payment system. It includes a report on the progress of the Current Beneficiary Survey (CBS) being conducted by the Health Care Financing Administration (HCFA). The role of other federal agencies in both monitoring and developing methods to assess access is also discussed.

The chapter concludes with a discussion of two other issues bearing on beneficiary financial protection: beneficiaries' understanding of the Medicare program and their role in monitoring physician billing practices. These include agreements between physicians and beneficiaries that are intended to limit liability for charges associated with services deemed medically unnecessary and the design and standardization of the Explanation of Medicare Benefits (EOMB) form. The Commission reiterates the recommendation made in its 1990 report regarding the calculation of charges exceeding balance billing limits on the EOMB.

RECOMMENDATION

All Medicare carriers should use a standardized Explanation of Medicare Benefits form that provides information to help protect beneficiaries from charges exceeding Medicare limits. The correct allowable maximum charge for the total claim should be calculated for the beneficiary on the EOMB form. The EOMB

form should state that the beneficiary is not liable for any amount above this maximum.

EFFECTS OF PAYMENT REFORM LEGISLATION ON BENEFICIARIES

Three provisions of OBRA89 are expected to improve beneficiary financial protection. These provisions, all based on recommendations made by the Commission in its 1989 annual report, include limits on what physicians may charge above the fee schedule amount,[1] a ban on balance billing of beneficiaries whose cost sharing amounts are paid by Medicaid, and a requirement that physicians submit all claims for Medicare beneficiaries (PPRC 1989a).

The OBRA89 charge limits will significantly reduce balance billing on most unassigned claims. The Commission's simulations suggest that liability for balance billing will decrease by more than 75 percent once charge limits are fully phased in.[2] Fewer beneficiaries will have balance bills, especially large ones. Fully 68 percent of beneficiaries will experience decreases in the amount of copayments and balance bills combined.

The finding that OBRA89 charge limits will provide substantial financial protection to beneficiaries was confirmed by Mitchell and Menke (1990). Their analysis indicates that even though the average patient can anticipate a small increase in copayments under the Medicare Fee Schedule, this increase will be more than offset by the limits on balance billing. Mitchell and Menke's simulations suggest that the average Medicare beneficiary would experience a 23 percent reduction in out-of-pocket spending under the 125 percent charge limit and a 28 percent reduction under the 115 percent limit.[3] Balance billing limits will also help protect patients with catastrophic expenditures. Baseline data indicate that nearly 8 percent of beneficiaries using physician services incur total out-of-pocket expenses in excess of $1,000 and that more than 2 percent have liabilities above $2,000. Under the 115 percent limit, the percentage of users with balance bills exceeding $1,000 and $2,000 will drop to slightly less than 4 percent and less than 1 percent, respectively.

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[1] The legislation limits charges to 125 percent of the payment for nonparticipating physicians in 1991, scaling down to 115 percent in 1993 and thereafter. Because nonparticipating physicians will be paid 95 percent of the fee schedule amount, the effective charge limit in 1993 will be 109.25 percent.

[2] These simulations assume static assignment and participation rates.

[3] These findings may actually understate the extent of financial protection. Mitchell valued anesthesia services at their current charge levels even though these services are expected to be reduced substantially under the Medicare Fee Schedule. Mitchell also valued all services that were not included in Phase I of the Hsiao study at their current charge levels.

Other findings from this study are also noteworthy. Mitchell and Menke suggest that more beneficiaries will exceed the Part B deductible under the new payment system.[4] This is because the services received by low utilizers are typically visits, and fees for visits will increase under the Medicare Fee Schedule. The people most likely to experience increased out-of-pocket costs are blacks (because they receive more medical services and fewer surgical procedures relative to whites) and rural residents. The effects of payment reform on these subpopulations may merit particular emphasis in monitoring efforts discussed below.

Some have expressed concern that a provision of OBRA90 that raises the balance bill limit for evaluation and management (EM) services to 140 percent for one year only undermines the intent of OBRA89. This situation reflects the tension between two goals of payment reform: promoting equity among physicians by more adequately compensating them for EM services, thereby ensuring that they will continue to provide services to beneficiaries, and providing financial protection for beneficiaries by limiting balance bills. Some evidence suggests that the amount of additional balance billing attributable to this change in the law, however, will be small relative to reductions in balance bills that result from other OBRA90 provisions, such as payment cuts for overvalued procedures and other services. Less is known about OBRA90's effect on the distribution of balance bills across beneficiaries.

Finally, beneficiaries have already been relieved of the burden of submitting claims by the OBRA89 provision requiring that physicians submit all Medicare claims for them. Previously, physicians were required to submit only claims taken on assignment. Although this provision is expected to ensure appropriate payment for covered services and facilitate more accurate and timely payment of claims, its effects will not be known for some time. This is because physicians have one year from the time of service to submit claims. Therefore, while carriers can detect some problems (for example, when claims are submitted by beneficiaries), physicians who fail to comply cannot be judged in violation until a full year has passed from the September 1990 date when this provision became effective.

STATE ACTION CONSTRAINING BALANCE BILLING

Beyond the protection afforded by OBRA89 and OBRA90, beneficiaries in several states enjoy an additional measure of protection as a result of state laws affecting Medicare assignment. In its 1988 and 1989 annual reports, the Commission described laws in

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[4] Mitchell's analysis assumed a Part B deductible of $75. Under OBRA90, the deductible was increased to $100.

Connecticut, Massachusetts, Rhode Island, and Vermont (PPRC 1989a and 1990). Since then, Rhode Island has expanded the scope of its mandatory assignment statute and two other states, Pennsylvania and New York, have enacted new laws. This section begins with a brief description of these statutes. It then considers the findings of the General Accounting Office's (GAO) 1989 report on the effects of mandatory assignment laws on beneficiaries.

Rhode Island

A 1987 Rhode Island law required that physicians accept Medicare assignment for persons over the age of 65 who earned less than $12,000 a year individually or $15,000 per family. The scope of the law was expanded, as of January 1, 1990, to require Rhode Island physicians to accept assignment on all Medicare claims. Physicians who fail to comply with the statute can be found guilty of unprofessional conduct and are subject to a variety of sanctions.

At the time of enactment, it was estimated that this change in the law would increase the number of patients affected from 75,000 to 150,000. Only a small percentage of charges will be affected by the new law, however, because Rhode Island's assignment rate (98.7 percent of covered physician charges in fiscal year 1990 [HHS 1990]) has long been among the highest in the nation.

Pennsylvania

Pennsylvania physicians have also been required to accept assignment on all Medicare claims since September 8, 1990. Physicians who violate the Health Care Practitioners Medicare Fee Control Act face fines and can be publicly reprimanded by the state licensing board. As in Rhode Island, high assignment rates among Pennsylvania physicians suggest that a small percentage of claims will be affected. In fiscal year 1990, 95.7 percent of covered charges by Pennsylvania physicians were taken on assignment (HHS 1990).

New York

New York's balance billing statute takes a slightly different approach than those in Rhode Island and Pennsylvania. Rather than requiring mandatory assignment, the law imposes more stringent balance billing limits than those established by OBRA89. New York physicians may charge only up to 115 percent of the Medicare-allowed charge, except for office and home visits, as of January 1, 1991. This limit will decrease to 110 percent in 1993. If, however, the total number of claims taken on assignment does not increase by 5 percent (increasing from the current 83 percent to 88 percent) by 1992, the limit will be set at 105 percent of the allowed charge. Physicians who violate the charge limits must provide a refund to the beneficiary and may be subject to fines of up to $5,000.

Analysis of Effects of State Laws on Beneficiaries

A 1989 General Accounting Office report analyzed mandatory assignment laws in four states (Connecticut, Massachusetts, Rhode Island, and Vermont) to determine if the statutes reduced out-of-pocket costs for Medicare beneficiaries, increased the volume and intensity of physician services, or reduced access to care. Specifically, the GAO used Medicare claims files to analyze assignment rates for physician services, beneficiary liability for balance bills, the number of beneficiaries receiving services, and the volume of certain services provided per beneficiary before and after implementation of the laws.[5] In addition, the GAO looked at trends in estimates of physician supply and interviewed members of organizations representing both physicians and beneficiaries. This methodology permitted a quick analysis of changes but may have glossed over important nuances. For example, these data sources did not measure other important access indicators including the number of physicians willing to provide care to Medicare beneficiaries, the extent of their Medicare caseload, and whether beneficiaries had to wait longer or travel further to obtain care.

On the basis of these limited data, the GAO concluded that the financial liability of Medicare beneficiaries was reduced in all four states. Moreover, physicians did not offset these losses by increasing charges to other patients. The GAO's analysis also found that volume and intensity did not increase in three states. Although such increases did occur in Massachusetts, the contribution of the mandatory assignment law is unclear. Finally, the GAO concluded that access to care, as measured by changes in physician supply and the number of beneficiaries receiving Medicare services, was not compromised in any of the four states.

The GAO cautioned that the experience of these four states is not necessarily applicable to others. Further, concern was expressed that mandatory assignment laws could have adverse effects over the long term. For example, one might not expect physicians to limit care of Medicare patients or move to another state immediately upon enactment. The GAO suggests, however, that over several years, such developments could impede access to care for Medicare beneficiaries. It may be appropriate to devote special attention to monitoring the effects of payment reform in states with mandatory assignment laws.

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[5] Services were analyzed that were thought to be susceptible to increased intensity. These included office visits, hospital visits, emergency room visits, consultations, skilled nursing facility visits, and nursing home visits.

PLANS FOR MONITORING ACCESS

Throughout its deliberations, the Commission has considered improving access to care for Medicare beneficiaries to be one of the principal goals of physician payment reform. A more rational and equitable payment system should remove barriers to care created by relative underpayment for certain types of services and in certain geographic areas. There is, however, great uncertainty about physician responses to changes in payment levels. Mechanisms are needed to ensure that any untoward effects on access are promptly detected.

The Commission believes that the new Medicare Fee Schedule, coupled with a system of Volume Performance Standards and charge limits, holds great promise for improving access. It also places a high priority on substantial efforts to monitor the impact of these policy changes on beneficiary liability and access.

In its 1989 report, the Commission articulated a plan for monitoring access that considers utilization, out-of-pocket expenditures, and other indicators across types of services, geographic areas, and beneficiary subpopulations. Many of these ideas were adopted in provisions of OBRA89 that direct the Secretary of Health and Human Services to report annually on trends affecting beneficiary liability and access to physicians' services and that provide a role for the Commission in reviewing this report. This section examines the statutory responsibilities of the Health Care Financing Administration and the Commission in monitoring access and considers progress to date. Future directions and the cooperation of other federal agencies are also discussed.

The Medicare Program's Role in Monitoring Access

Under OBRA89, beginning in 1991 the Secretary must report annually on changes in utilization and access to services within geographic, population, and service categories. The report must identify possible sources of inappropriate utilization, the factors underlying any changes, and their interrelationships. The Secretary must also present an analysis of charges by physicians not enrolled in the Participating Physician and Supplier (PAR) program for services provided on or after January 1, 1991. This report must be expanded in 1992 to include monitoring of changes in the proportion of expenditures attributable to participating physicians, in the proportion of expenditures made under assignment, and in balance billing practices by specialty, type of service, and geographic area. Any significant changes in these indicators will require development of a plan of action that will be reviewed by the Congress and the Commission.

HCFA is pursuing a number of strategies to develop information for these reports. These include analyzing claims data to develop prepayment reform trend data on utilization by categories of services (such as evaluation and management services, major surgical procedures, and imaging) and by beneficiary characteristics (for example, sex, race, rural or urban). Carriers are also being consulted concerning the development of new screens and edits to pick up sources of inappropriate utilization.

Monitoring activities must go beyond analysis of claims data, however, in order to capture many important variables that are known to affect access to care. These include income, supplemental insurance coverage, and more qualitative measures such as patient satisfaction and self-reported health status. The Commission has long held that an ongoing survey of Medicare beneficiaries is critical to understanding the effects of payment reform on access. It is hoped that the Current Beneficiary Survey--a longitudinal survey of 12,000 Medicare beneficiaries currently being planned by HCFA's Office of the Actuary--will receive sufficient support to fulfill this role.

At this writing, plans are to have the Current Beneficiary Survey in the field in September 1991. This deadline will permit one full round of data collection before implementation of the Medicare Fee Schedule in January 1992. HCFA will also create a file of Medicare claims for sample respondents that includes complete cost and utilization data for 1991. In addition, the special topics supplement in this first round will be devoted to access issues. Questions in the supplement were developed in consultation with Commission staff and others. Among the topics relevant to payment reform that will be included in the supplement are forgone or delayed care, usual source of care, and the extent to which beneficiaries have difficulty finding different types of physicians (primary care and specialists) or physicians who accept assignment.

The usefulness of the Current Beneficiary Survey in assessing access issues is somewhat limited. First, the CBS was not primarily designed to look at access indicators. The data will be used primarily to develop projections on program expenditures, to assess proposed program and administrative changes, and to develop national estimates on health care expenditures of the elderly and disabled. Other limitations are related to budget constraints. For example, while analysis by census regions will be possible, the sample size is insufficient to support estimates by state, locality, or procedure.[6] Analysis of potential differences in access to care between blacks and whites will also be limited because the sample design does not include oversampling of minorities. The more important limitation of the survey, however, is that data collection will not begin until late 1991. By then, charge limits will have been well established, and many changes in payment in the direction of the Medicare Fee Schedule will already have occurred (see Chapter 1). Ideally, an on-going beneficiary survey should have been in place to capture information on utilization, expenditures, and access before any policy changes were made.

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[6] It may be possible, however, to conduct comparative analyses on selected localities.

The Commission's Role in Monitoring Access

The Commission's role in monitoring access parallels its statutory authority as an adviser to the Congress. That is, the Commission will recommend strategies and approaches for monitoring that can be carried out by HCFA and other agencies. The law specifically requires the Commission, in consultation with a panel of physician experts, to comment on the Secretary's analysis of the effects of payment reform on utilization and access changes within geographic, population, and service-related categories. This process will begin when the Secretary makes his first such report in April 1991; the Commission will send its report to the Congress by May 15.

In February 1991, the Commission convened the first meeting of this panel. Its 12 members include physician experts as specified in OBRA89 as well as distinguished health services researchers and representatives of beneficiaries (Table 7-1). A permanent body, the panel on access will meet several times each year.

Table 7-1. Members of Commission's Panel on Access

Perham Amsden	American Association of Retired Persons
Robert Blendon, Sc.D.	School of Public Health, Harvard University
Geraldine Dallek	Medicare Advocacy Project
Charles H. Epps, M.D.	College of Medicine, Howard University
Lynn Etheredge	Independent Consultant, Washington, DC
Harold P. Freeman, M.D.	Director of Surgery, Harlem Hospital Center
Lucian Leape, M.D.	School of Public Health, Harvard University
Stephen H. Long, Ph.D.	RAND Corporation
Nicole Lurie, M.D.	Department of Medicine, Hennepin County (MN) Medical Center
Ira Moscovice, Ph.D.	School of Public Health, University of Minnesota
Martin F. Shapiro, M.D.	School of Medicine, University of California at Los Angeles
Barbara Yawn, M.D.	Private Practice of Medicine, Rochester, MN

The panel's task is to help the Commission develop analytical strategies, identify relevant data sources, and analyze this data. It will also investigate possible causes of harmful or beneficial effects of payment changes on access and consider strategies for measuring the extent of such changes. At its initial meeting, the panel identified measures of access (including clinical indicators), vulnerable populations, and data sources that can be used in monitoring access. Panelists also stressed the importance of obtaining information more rapidly than current data sources permit.

At future meetings, the panel may examine whether access problems are confined to particular geographic areas or services and whether small area variation analysis can be used to identify areas with limited access to medical care. It may also draw on work by Commission staff to identify tracer services for monitoring access and explore differences in baseline utilization rates for these services among various Medicare populations (for example, the poor, residents of rural areas and inner cities, the disabled, and minorities).

The Commission believes that other federal agencies, including the Agency for Health Care Policy and Research (AHCPR), the National Center for Health Statistics (NCHS), and the General Accounting Office, should also be engaged to improve understanding about access to care. For example, under its authority to support research, demonstrations, and evaluations concerning the health of low-income populations, minorities, and the elderly, the AHCPR could fund efforts to develop more sensitive indicators of access problems. Survey data collected by the NCHS and case studies conducted by the GAO could also be tailored to answer questions about the effects of federal policies on utilization of services, changes in usual source of care, the extent of forgone care, and other measures of access.

OTHER CONCERNS AFFECTING FINANCIAL PROTECTION OF BENEFICIARIES

Beneficiary liability may be affected by factors other than the magnitude of cost sharing. Adequate financial protection also depends, to an extent, on beneficiaries' understanding of the Medicare program and their ability to detect errors or fraud in physician billing practices. Beneficiaries may, for example, have difficulty understanding the difference between Medicare's allowed charge and what physicians may charge, identifying when overcharges have occurred, and getting refunds from physicians for amounts paid in excess of the balance billing limits.

Although the new system of charge limits is far simpler than the current system of maximum allowable actual charges (MAACs), beneficiaries may need additional tools and safeguards to protect themselves from inappropriate billing practices. This section considers whether the Explanation of Medicare Benefits form effectively informs beneficiaries of their liability and the appropriateness of limitation of liability agreements that beneficiaries sign at the time of service.

The Explanation of Medicare Benefits Form

For many beneficiaries, the EOMB is the primary source of information on Medicare payment for physician services. In the Commission's view, the ability of beneficiaries to understand the information on the EOMB and interpret it correctly is critical. At a minimum, beneficiaries should be able to identify the services rendered and the amount of their financial obligation. Without this information, beneficiaries have limited ability to detect errors, inappropriate billing practices, or fraud.

Payment reform promises to improve substantially beneficiaries' ability to understand what Medicare will pay and what physicians can charge above the approved amount. Changes in the EOMB, however, are also needed. In particular, the Commission recommends that the EOMB be standardized. It also reiterates the recommendation in its 1990 report that the correct maximum allowable charge should be calculated on the EOMB. Beneficiaries should be informed that they are not liable for any amount above this limit.

Work is under way within the Health Care Financing Administration to redesign the EOMB and begin using a new form to coincide with the implementation of the Medicare Fee Schedule in January 1992. The Commission is hopeful that these efforts will improve beneficiary understanding of the Medicare program and facilitate beneficiaries' ability to protect themselves.

Problems with the EOMB. Organizations representing beneficiaries and Medicare carriers both agree that there are problems with content and readability of the EOMB. Beneficiaries frequently do not understand the action taken by the Medicare program or whether the program has paid for the services. The Commission's survey of Medicare beneficiaries also suggests that beneficiaries have difficulty interpreting the EOMB. When asked to review two sample EOMBs, less than 60 percent of respondents could identify whether the patient had met the deductible and only 30 percent could indicate whether the provider was a participating physician. Only one-third of respondents could identify the patient's liability associated with an office visit (PPRC 1989b).

A recent study by the General Accounting Office also found that the EOMB is confusing to beneficiaries (GAO 1990). Specifically, the GAO expressed concern that descriptions of services provided are too vague, individual provider names are not always shown, and mathematical calculations and explanations of beneficiary liability are difficult to understand. Moreover, denial notices sent to beneficiaries frequently omit either the reasons for the denial or the steps a beneficiary can take to appeal it.

The GAO made three recommendations to improve the EOMB. First, HCFA should establish a formal mechanism to solicit feedback from carriers and beneficiaries on benefit notice problems and should use this feedback to improve notices and messages. Second, benefit notices should be examined as an integral part of annual carrier performance evaluations. Third, HCFA should monitor carriers to ensure that notices are sent in all required cases so that beneficiaries have the opportunity to detect potential payment errors or fraudulent claims.

Solutions. HCFA has convened a work group within the Bureau of Program Operations to redesign the EOMB to address many of these problems. In cooperation with HCFA's regional offices and the Administration on Aging, beneficiary focus groups are being used to identify the types of information and the graphic design elements that are most understandable. Carriers are also being consulted to identify changes that are compatible with computer systems and other requirements of claims processing. A final standardized draft to be used by all Medicare carriers when the Medicare Fee Schedule is implemented is anticipated by June. While the Commission supports this effort, it is concerned that early drafts did not include calculations to indicate whether balance bills fell within charge limits.

Limitation of Liability

Under the "limitation of liability" provision of the Medicare statute, physicians may ask beneficiaries to accept financial responsibility for services that may be denied as medically unnecessary. Little is known about the extent to which Medicare beneficiaries are being asked to sign advance notices or the extent to which such notices comply with HCFA regulations.

The Commission is concerned about two major problems related to this provision. First, physicians and beneficiaries appear not to be well informed about the law and the content of compliant notices. Second, not all carriers are providing accurate information to physicians on the wording of agreements. To address these problems, the Commission suggests two approaches. The Health Care Financing Administration should ensure that all carriers are aware of the regulatory requirements and that carrier communications with physicians and beneficiaries reflect the letter of the law. Further, organizations representing physicians and beneficiaries should inform their members about the law and their rights and responsibilities under it.

This section outlines the provisions of the Medicare statute affecting these agreements; the relevant regulations affecting their content; and physician, beneficiary, and carrier understanding of these regulations. The section concludes by questioning whether such agreements are fair to either beneficiaries or physicians.

The Limitation of Liability Provision. Section 1879 of the Social Security Act provides both physicians and beneficiaries with protection from liability for certain claims denied when the services received are found not to be medically necessary. Three different circumstances are affected by this provision. First, if neither the beneficiary nor the physician knew, or could have reasonably been expected to know, that the services would not be covered, the program will pay for the service. Second, if the beneficiary did not have such knowledge but the physician did, then liability for the charges rests with the physician.[7] Finally, if the beneficiary was informed by the physician in advance that Medicare will not pay for the service and the beneficiary agrees to pay, the beneficiary remains responsible for paying the physician.

Because of this last proviso, many physicians inform their patients in writing that Medicare may not pay for a particular service before they actually provide it. In the claims adjudication process, this can be considered as evidence that the beneficiary was informed and therefore remains liable for the charges. Although the exact number of beneficiaries asked to sign such agreements is not known, this practice is thought to be widespread.

Content of Agreements. HCFA has set some requirements about the content of advance notices. First, the notice must give the beneficiary a specific reason why the physician anticipates a Medicare denial. Acceptable reasons include statements such as "Medicare usually does not pay for more than one visit per day" or "Medicare usually does not pay for like services by more than one doctor during the same time period."

Second, the notice must also specify the particular service. Routine notices for all claims and services stating that denial of payment is possible or that the physician never knows when Medicare will deny payment are not considered acceptable. When notices fail to meet these requirements, the beneficiary is considered not to have known that a denial could have occurred, and the physician becomes liable for the charges.

Knowledge of Regulations by Carriers, Physicians, and Patients. HCFA provides sample notices and sample "Dear Doctor" letters in its carrier manual to inform contractors about the appropriate content of advance notices. But there are several other conduits of information about appropriate content. Carriers inform physicians and beneficiaries about the statute through a variety of methods.[8] Organizations representing physicians and beneficiaries may also educate their constituencies on compliance with the law. As discussed below, some of these methods have been more effective than others in disseminating correct information.

Carrier Communication with Physicians. Carrier practices are extremely varied in both the content and methods of communication with physicians. Carriers often hold periodic seminars for physicians on a wide range of Medicare issues, and many have used this format to explain regulations and to point out differences between noncompliant and appropriately worded agreements. Newsletters are also used to keep physicians advised of regulatory changes and to provide samples of compliant agreements.

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[7] Until passage of the Omnibus Budget Reconciliation Act of 1986, Section 1879 only protected beneficiaries when the physician accepted assignment. By contrast, under current law, nonparticipating physicians who do not accept assignment must refund to beneficiaries any amounts collected for services denied because they are not reasonable and necessary. Physicians accepting assignment can be debited by the program with an "overpayment."

[8] Staff contacted 13 Medicare carriers as well as the Blue Cross and Blue Shield Association to learn more about carrier practices related to the limitation of liability provision.

Some carriers have been very aggressive in their liaison efforts with the medical community. Others have taken an ad hoc approach, responding only when problems arise. Similarly, some carriers have disseminated model notices that are strictly compliant with HCFA regulations while others have provided model notices that do not meet regulatory requirements.

Carrier Communication with Beneficiaries. Carrier communication with beneficiaries and organizations representing beneficiaries tends to be more limited. Although most carrier representatives are willing to appear before beneficiary organizations if asked, they do not know whether beneficiaries as a group understand the provisions of the limitation of liability provision. For the most part, these concerns are handled on a case-by-case basis. For example, beneficiaries have the option of requesting review of claims that are denied. This is thought to be an important method of identifying physicians who misuse agreements.

Communication Between Organizations Representing Physicians and Beneficiaries and Their Constituencies. Communication between organizations representing beneficiaries and physicians and their respective members also varies. The American Medical Association's publication, *Medicare Carrier Review: What Every Physician Should Know About "Medically Unnecessary" Denials*, provides a lengthy and accurate discussion of the limitation of liability provision including sample notices (American Medical Association 1988).

Anecdotes brought to the Commission's attention, however, indicate that other medical societies may be providing physicians with incomplete or inaccurate information. The Commission examined numerous sample notices furnished by beneficiaries, carriers, and physicians. It found several that failed to meet HCFA's criteria. For example, one agreement specified the service but did not offer a rationale about why a denial was anticipated. Another neither specified the service nor the rationale. It also mentioned routine cancer screening and immunizations. The limitation of liability does not apply to these services because they are never covered by Medicare.

Organizations representing beneficiaries should be more vigilant. The American Association of Retired Persons (AARP) Health Care Campaign, the arm of AARP that develops pamphlets and other educational materials for members, does not currently have any literature on this provision but has expressed interest in developing some in the future.

Protection of Beneficiaries. There are several reasons why it is difficult to say whether such notices protect beneficiaries adequately. First, it is unclear if beneficiaries are aware of the limitation of liability provision or can identify a lawful agreement. HCFA's

Medicare Handbook includes several paragraphs on the provision but does not explain that agreements must meet specific criteria.

The second reason is related to the adequacy of carrier review practices as discussed in the Commission's 1989 annual report. Carriers have considerable discretion in developing medical review criteria and in screening claims for medical necessity and appropriateness. Consequently, one carrier may deny a particular service as unnecessary, while another carrier may consider the same service acceptable. In the first case, the beneficiary becomes liable for the charges; in the second, he or she is not. Improvements in this process, whether in the development of review criteria or in the screening of claims, could benefit beneficiaries.

The third issue is whether agreements constitute "informed" consent. In the past, the Commission has considered similar issues. For example, can choice be truly informed if the alternative is to leave the care of a physician one trusts or if the beneficiary is ill and therefore emotionally distressed? These are unanswered questions. It is worth noting, however, that HCFA requires that physicians provide a specific reason for an anticipated denial in part to ensure that beneficiaries receive sufficient relevant information to permit an informed decision.

Fourth, the extent to which certain physicians may use inappropriate or excessive numbers of agreements is not known.[9] While there was considerable confusion when the provision was first implemented, carriers believe that most physicians now understand the law and use notices appropriately. Constantly changing rules and regulations are known to be a source of frustration to physicians, and carriers believe that a minority may require patients to sign agreements for all services as a form of protection from all changes in the program.

Fairness to Physicians. Carriers hold physicians to a rigorous standard in determining whether they knew or could have been expected to know that payment would be denied.[10] Physician organizations have long argued that this practice penalizes physicians for their lack of familiarity with carrier utilization review policies and screens. In response to this criticism, HCFA has announced that it will require carriers to solicit comments on changes in medical coverage policy from state medical societies and appropriate specialty societies on changes in medical coverage policy. Carriers have also been instructed to make all existing policies available to these organizations and to consider comments on existing policies and their implementation.[11]

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[9] While there are no special monitoring procedures affecting these agreements, carriers do require that physicians furnish copies of notices to Medicare either when the claim is submitted or through an appeal of an unfavorable determination that a refund is due. A more uniform approach to monitoring may be appropriate.

[10] A physician is considered to have knowledge that payment will not be made if the carrier ever (1) notified the medical community that certain services are not covered or that services exceeding certain frequencies would be denied or subjected to additional review, or (2) notified the physician that services would be excluded in all or certain circumstances.

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[11] Under OBRA90, the Secretary is required to establish a 15 member Practicing Physicians' Advisory Council that will meet quarterly to consider proposed changes in regulations and carrier manual instructions. The Secretary is also required to study the effect of releasing prepayment medical review screens to physicians and to report to the Congress by October 1, 1992.

CHAPTER 8

CODING FOR EVALUATION AND MANAGEMENT SERVICES

Implementation of the Medicare Fee Schedule will require changes in the codes physicians use to report their evaluation and management (EM) services. Currently, physicians bill Medicare for EM services using *Current Procedural Terminology* (CPT) visit codes. However, as the Commission and others have shown, these codes are not interpreted or used uniformly (PPRC 1989). Physicians in different parts of the country and in different specialties use the same CPT code to bill for visits that vary substantially in terms of work. This variation can be accommodated under the customary, prevailing, and reasonable method for determining payment, since payment is based on charge screens that vary by locality and specialty. But under the Medicare Fee Schedule, a single relative value will be assigned to each code nationally, and this code will apply to physicians in all specialties. Consequently, unless visit codes are revised so that they represent similar resource costs to all who use them, it will be difficult to assign accurate relative values or to ensure equitable payment for EM services under the fee schedule.

During the past year, the Commission has developed a model visit coding system that meets the needs of a resource-based fee schedule. This system closely follows recommendations of a consensus panel of physicians, nonphysician practitioners, Medicare carriers, private insurers, consumers, and members of the CPT Editorial Panel that was convened by the Commission and the American Medical Association (AMA). After the consensus process was completed, the Commission refined the panel's proposals to address concerns raised by specialty societies, the CPT Editorial Panel, and the Health Care Financing Administration (HCFA). The CPT Editorial Panel also modified the consensus panel's proposals, making substantial changes in the levels of service. This chapter describes the Commission's visit coding system, presenting the rationale behind it. It also discusses the differences between the levels of service in the Commission's system and in the system currently being pilot-tested by CPT.

RECOMMENDATION

The coding system for visits and consultations should be reformed so that codes can be interpreted uniformly by physicians and payers, understood by patients, and assigned accurate relative values under a resource-based payment system.

The Commission believes that the simplest coding system that accomplishes these goals should be adopted. It has developed a model system that meets this criterion. The system uses:

- **twelve classes of codes to distinguish visits that differ in terms of effort or practice costs;**
- **a uniform set of five levels of service (reflecting the complexity of medical decisionmaking, the extent of EM services provided, and typical physician encounter time) to differentiate visits in all classes; and**
- **a special modifier to code for visits with patients who have communication barriers, disabling cognitive or physical impairment, or an unusual need for counseling or coordination of care.**

The Commission is concerned about the visit coding system currently being pilot-tested by CPT because the number, content descriptors, and times in the levels of service differ for each class of visit. The Commission believes that this system might introduce a degree of complexity beyond what is necessary and might compromise the goals of coding reform. The Commission hopes that the pilot test of the CPT coding system results in refinements that meet the needs of a resource-based payment system.

APPROACH TO EM CODING REFORM

Analyses of data from Phase I of the National Study of Resource-Based Relative Value Scales for Physician Services (Hsiao study) and the Commission's Survey of Visits and Consultations (Visit Survey) suggest that visit codes would be used more uniformly if time as well as content were incorporated in the definitions (PPRC 1989; PPRC 1991). This is because physicians in different parts of the country and in different specialties estimate work similarly for a given type of visit that lasts the same amount of time.[1] For example, both studies found that physicians estimate work similarly for established patient office visits that last 30 minutes.

Not all types of visits that last a given amount of time, however, involve the same resource costs. Some types of visits involve more effort (work per unit of time) than others. Some types of visits make proportionally greater use of physician-employed ancillary personnel. And some types of visits make greater use of specialized equipment.

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[1] This finding applies to both office and hospital visits.

A coding system based on classes of visits and time-incorporating levels of service could account for the variables that influence resource costs. Separate classes of codes could be used to distinguish the types of visits that differ in terms of effort or practice costs. For example, if visits with new patients involve more work per unit of time than those with established patients, the coding system could have separate classes of codes for new patient visits and established patient visits.

Visits within each class could be differentiated by levels of service defined on the basis of content and "typical time." For example, a Level 3 new patient visit would involve more complex evaluation and management services and typically last longer than a Level 1 new patient visit. With time-incorporating levels of service, physicians would not be paid by the minute. Rather, they would be paid for the content of a level of service, which takes physicians, on average, a certain amount of time to provide.

While the structure of this type of coding system would be similar to the system currently used by CPT, there would also be important differences. CPT is based on classes of visits (such as new patient office visit, subsequent nursing home visit, and initial consultation) and levels of service (minimal, brief, limited, intermediate, extensive, and comprehensive). However, CPT was not designed for a resource-based fee schedule. The classes of visits do not necessarily reflect differences in effort or practice costs. The levels of service, which are defined solely on the basis of content, do not incorporate time or describe visits that typically take a certain amount of time.

A coding system based on time-incorporating levels of service and classes of visits that differ in terms of effort or practice costs would permit assigning fees that accurately account for the resource costs of visits.[2] A total work value would be assigned to each code using the typical time in the level of service and the relationship between total work and time for the class of the visit. For visits within each class, payment would be higher for higher levels of service (visits that typically take more time and involve more complex EM services). For example, payment would be higher for a Level 4 than a Level 3 established patient office visit. Payment per level of service would vary across classes, reflecting differences in effort and practice costs. For example, payment for a Level 3 service could be different for established patient office visits, initial hospital visits, and initial consultations.

In a fee schedule without specialty differentials, this type of coding system would help ensure equitable EM payment to different types of physicians. Physicians in different specialties do not provide the same mix of visits. For example, physicians in some specialties provide primarily short established patient office visits. Physicians in other specialties provide longer visits or a greater proportion of consultations or hospital visits. If the classes and levels of service in the coding system recognize the full spectrum of visits, physicians in each specialty would be able to choose codes that accurately reflect the EM services they provide.

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[2] This is because time is a good predictor of the work involved in providing visits within each class (Hsiao and others 1988; Hsiao and others 1990; PPRC 1989; PPRC 1991).

This type of coding system could also provide payers with a more accurate and less intrusive means for screening EM claims. The duration of different types of visits is recorded routinely in physician surveys, such as the National Ambulatory Medical Care Survey. If the content descriptors in the levels of service correlate well with the typical times, times recorded in surveys could be used to predict the mix of visit codes each specialty would be expected to use for billing. Insurers could then screen each physician's EM claims by comparing them with the profile for his or her specialty.

PROCESS USED TO DEVELOP THE COMMISSION'S VISIT CODING SYSTEM

During the past year, the Commission has developed a model coding system for visits that meets the needs of the Medicare Fee Schedule. This coding system closely follows recommendations of a consensus panel convened by the Commission and the AMA.[3] Some modifications were made after the consensus process was completed to address concerns raised by specialty societies, the CPT Editorial Panel, and HCFA. This section describes the process the Commission used to develop its visit coding system. The components of the coding system are discussed in the following section.

Consensus Process

In January 1990, the Commission and the AMA jointly convened a consensus panel to develop recommendations for revising CPT visit codes. The panel's charge was limited to the generic visit codes that are used by physicians in most specialties. Revising codes for specialized visits, such as psychiatric, ophthalmologic, emergency, critical care, and preventive care visits, was not part of the panel's mandate.

Members of the Panel. Recognizing that visit code reform would have an impact on many different groups, the Commission and the AMA sought representation of all involved parties. Nominations for panel members were solicited from a broad range of national organizations. Of the 46 panelists selected, there were 29 physicians representing the medical and surgical specialties that provide visits, eight representatives of Medicare carriers and private insurers, five representatives of the CPT Editorial Panel, one representative each of nurses and physician assistants, and one representative each of elderly and nonelderly consumers.

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[3] The panel's recommendations are discussed in detail in the *Report of the PPRC/AMA Consensus Process on Coding for Evaluation and Management Services.*

Issues. The panel was charged with addressing five issues:

- What classes of visits should be recognized in the visit coding system?
- How many levels of service should be used to describe the classes of visits?
- How should "typical time" and content be integrated in the definitions for levels of service?
- What measure of time (for example, face-to-face encounter time, scheduled time, total time) should be used in the definitions for levels of service?
- Should the measure of time in the codes apply only to the physician's input or should it also apply to the evaluation and management services provided by the physician's employees?

Goals. In examining options for resolving each of these issues, the panel worked to find solutions that would meet the diverse needs of the parties that use visit codes. These needs were expressed as a set of goals that the visit coding system should meet.

- Visit codes should be clear and interpreted uniformly by all providers, payers, and beneficiaries.
- Visit codes should be clinically meaningful and should describe clearly differentiated services.
- The visit coding system should be simple and efficient for physicians to use and payers to administer.
- The visit coding system should facilitate the assignment of accurate and equitable resource-based relative values to visits without the use of specialty differentials.
- The visit coding system should encourage the efficient delivery of appropriate EM services.
- The visit coding system should facilitate the appropriate use of codes and should allow payers to detect when codes are being used inappropriately.

- The visit coding system should facilitate the generation of accurate data about EM services provided.

Process. A number of decisionmaking techniques were used in the six-month process. All members of the panel participated in an hour-long telephone interview, three lengthy mail questionnaires (which included review of data from various sources), and a final meeting. Ten panelists, representing the perspectives and demographics of the full panel, also participated in two subpanel meetings. This full panel/subpanel structure helped to maximize overall representation without sacrificing the effectiveness of a small working group.

Data. The data in the consensus process came from four sources: panelists' responses to mail questionnaires, Phase I of the Hsiao study, the Commission's Visit Survey, and recommendations of the AMA Ad Hoc Committee on Visits and Levels of Service.

> **Mail Questionnaires.** In three mail questionnaires, panelists used their judgment and expertise to evaluate how well various options would meet the goals of the coding system and to make suggestions for refinement. After the questionnaires were returned, panelists were provided with data packets that included analyses of their responses as well as data from other sources bearing on the issues before the panel.
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> **Hsiao Study.** Analysis of data from Phase I of the Hsiao study was based on the responses of 1,013 physicians in 13 specialties who estimated the work and pre-, intra-, and postservice time involved in 66 visit vignettes. This analysis is described in detail in Chapter 3 and Appendix B of the Commission's *Annual Report to Congress, 1989* (PPRC 1989).
>
> **Commission Visit Survey.** The Commission's Visit Survey was designed to provide the panel with data bearing on the issues in its charge. In this survey, which was conducted in 1989, 339 physicians in three specialties (internal medicine, rheumatology, and urology) recorded times, estimates of work, and patient characteristics for 19,000 visits provided in the office and hospital. Using clipboards with attached digital watches, the physicians and their staffs separately recorded start and stop times for specific EM services performed on the day of the encounter. They also estimated the time involved in providing specific EM services related to the visit but performed before or after the day of the encounter. Physicians estimated total physician work for each visit (by comparing it to the work of a standard vignette) and the proportion of total physician work performed on the day of the encounter. Finally, each visit was characterized by the patient's age, whether the patient was new or established, the presence or absence of disabling cognitive or physical impairment, the site of service, whether the patient had been referred by another physician, and whether a new or existing

problem was addressed. The Visit Survey is described in detail in the Commission's background paper *Survey of Visits and Consultations* (PPRC 1991).

AMA Ad Hoc Committee on Visits and Levels of Service. The recommendations of the Ad Hoc Committee were based on hearings and meetings held in 1988 and 1989. These recommendations focused on new and established patient designations, place of service, and descriptors for levels of service.

Refinement of the Consensus Panel's Recommendations

When the consensus process was completed in June 1990, the Commission solicited comments about the panel's recommendations from organizations representing medical and surgical specialties, consumers, payers, and nonphysician practitioners. A total of 23 interest groups responded. In October 1990, the Commission refined the panel's recommendations, addressing concerns raised by these groups as well as by the CPT Editorial Panel and HCFA (as expressed in its *Model Fee Schedule for Physicians' Services* (HCFA 1990). The Commission further refined the content descriptors (incorporating language from CPT) following recommendations of an advisory panel of physicians that was convened in January 1991.

DESCRIPTION OF THE COMMISSION'S VISIT CODING SYSTEM

The Commission's visit coding system and the rationale behind it are described in detail below. The discussion focuses first on classes of visits, which account for variables that influence effort or practice costs. It then focuses on levels of service, which distinguish visits within classes that typically take more or less time. The final part of the discussion addresses special patient characteristics/needs. In most of its decisions, the Commission followed the consensus panel's recommendations closely. Where modifications were made, the reasoning supporting the change is noted. A summary of the Commission's coding system is presented in Appendix B.

Classes of Visits

> *The Commission's visit coding system recognizes 12 classes of visits: new and established patient office visits, initial and subsequent hospital visits, initial and follow-up consultations, initial and subsequent nursing facility visits, initial and subsequent rest home visits, and new and established patient home visits.*[4]

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[4] Additional classes of codes will also probably be required for specialized visits such as emergency department, critical care, ophthalmology, psychiatry, and preventive medicine visits. These types of visits are not encompassed by the Commission's coding system and will be addressed at a later time.

In the Commission's coding system, classes of visits are used to account for variables that influence effort and practice costs. Under such a system, payment for a given level of service would vary across classes, with higher fees being assigned to those types of visits that involve more effort or higher practice costs.

The consensus panel considered the following seven variables that could be used to classify visits:

- new and established patient
- initial and subsequent care
- new and existing problem
- consultations and nonconsultative visits
- site of service
- patient age
- presence or absence of cognitive/physical impairment

In making its decisions, the Commission reviewed all available data to determine which variables have a substantial influence on effort or practice costs. Such variables were incorporated in the coding system if they were also clear, clinically meaningful, verifiable, likely to be used appropriately and would not result in an unwieldy number of visit codes.

New and Established Patient; Initial and Subsequent Care. The Commission followed the consensus panel's recommendation to classify ambulatory visits on the basis of new and established patient and to classify inpatient visits on the basis of initial and subsequent care. The Commission also adopted the panel's definitions of these terms.

The panel's recommendation was based on analyses of data from Phase I of the Hsiao study and the Commission's Visit Survey, which show that visits with new patients involve substantially more effort than visits with established patients. In addition, the Visit Survey shows that initial hospital visits involve substantially more effort than subsequent hospital visits. The difference in effort between initial and subsequent visits appears to be similar in magnitude to the difference between new and established patient visits.

The members of the panel thought these survey findings were clinically meaningful. They noted that in new patient visits physicians not only create a new administrative record, but also establish a new medical relationship, elicit a past medical history, and evaluate one or more new problems. In initial hospital visits, physicians review old hospital records, dictate the admission note, write admission orders, and communicate the treatment plan with nursing staff and house staff. Since physicians in different specialties provide different proportions of new and established patient visits and different proportions of initial and subsequent hospital visits, a payment system without specialty differentials requires separate classes of codes for these types of visits to ensure equitable payment.

The panel thought that codes for these visits could be verified by insurers and would be likely to be used appropriately by physicians. Nonetheless, it spent considerable time developing definitions that would be clear and equitable and that would minimize any potential for inappropriate use.

> **NEW PATIENT** (ambulatory settings) -- A visit with a patient who is new to the physician's practice or who has not been seen within the past three years. The transfer of care from one physician to another constitutes a new patient visit.
>
> **ESTABLISHED PATIENT** (ambulatory settings) -- A visit with a patient who has been seen by the physician's practice within the past three years. Concurrent care constitutes an established patient visit.
>
> **INITIAL CARE** (inpatient settings) -- The initial visit by the admitting physician in which the medical record is established for an admission. The transfer of care from one physician to another constitutes initial care.
>
> **SUBSEQUENT CARE** (inpatient settings) -- Follow-up visits in an institution during an inpatient stay. Concurrent care constitutes subsequent care.

The panel focused its definitions on the physician's practice in ambulatory settings and on the admitting physician in inpatient settings so that physicians who cover for others would not be allowed to bill for these visits using new patient or initial care codes. But the panel recognized that this approach could be inequitable under certain circumstances. For example, sometimes a patient chooses another internist within a large multispecialty group practice or selects another surgeon during the course of a hospitalization. To prevent inequitable payment, the panel specified that the transfer of care from one physician to another constitutes a new patient or initial care visit. Under this definition, the new internist or surgeon would be allowed to bill for a new patient or initial care visit.

The panel incorporated a timeframe in the definitions of new and established patient--patients who have not been seen within the past three years are treated as new patients. It did this for two reasons: (1) to account for the additional effort involved in caring for patients who return after long intervals, and (2) as part of a trade-off for not having a separate class for established patient visits in which new problems are addressed (see below). Panelists noted that physicians often expend as much effort caring for established patients who return after long intervals as they do for new patients. As examples, they described patients who have had complex medical histories since they were last seen, or whose records have been stored and are therefore unavailable at the time of the visit. Panelists suggested that incorporating a timeframe in the definitions would be a clear and verifiable way to provide more equitable payment to physicians who care for these patients. They acknowledged that any timeframe is arbitrary, but chose three years because it was clinically meaningful to the specialty representatives on the panel and acceptable to the insurer representatives.[5]

New and Existing Problem. The Commission followed the panel's recommendation not to have separate classes for visits in which new and existing problems are addressed. It concluded that classifying visits on this basis would result in only a small improvement in the accuracy and equity of payment and that this benefit would not justify creating additional codes that would be difficult to verify and could be easily misused.

The decision not to create separate classes to distinguish visits in which new and existing problems are addressed was a particularly difficult one for the panel to resolve. The Visit Survey shows a small but significant difference in effort for visits with established patients in which new and existing problems are addressed, which the panel considered clinically meaningful. Since most visits are with established patients and since physicians in different specialties vary in the proportion of new and existing problems they address, many panelists thought it would be important to account for this variable in the coding system.

The panel could not, however, come up with definitions of new and existing problem that would be clear, verifiable, and likely to be used appropriately. The panel was concerned that if these goals could not be met, payers either would not recognize new and existing problem visits for differential payment or would institute medical record reviews that would delay payment.

After lengthy discussion, the panel decided not to incorporate new and existing problem in the coding system. But consensus was contingent on meeting three requirements. First, the panel thought that payment for established patient visits should be based on the relationship between work and time for all established patient visits (visits in which new or existing problems are addressed). That is, payment should not be based on the work/time relationship for only established patient/existing problem visits. Second, the panel emphasized the need for levels of service that adequately describe lengthy, complex visits. In this way, physicians who evaluate patients with difficult new problems could bill for these visits using appropriately high levels of service. Finally, the panel recommended incorporating a three-year timeframe in the definition of new patient visits. This would permit higher payment per level of service for patients who are seen after a lengthy interval, many of whom present with new problems.

Initial Consultation. The Commission followed the consensus panel's recommendation to have a separate class of visit for initial consultations. It also adopted the panel's definition (with a minor modification).

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[5] Timeframes shorter than three years were not acceptable to payers.

The panel's recommendation was based on analysis of data from the Visit Survey showing that initial consultations entail substantially more effort than new patient or initial nonconsultative visits. The results of the Visit Survey are consistent with Phase I of the Hsiao study. But the conclusions that can be drawn from the Hsiao study are limited since physicians in Phase I were only surveyed about work and pre-, intra-, and postservice time for hospital consultations.

The panel thought initial consultations involve more effort than initial or new patient nonconsultative visits because they function as a proxy for severity of illness and clinical expertise. Patients seen in consultation tend to have complex problems that cannot be managed by their primary care physician. Thus, consultants make greater use of their special training during consultations and expend additional effort reviewing other physicians' findings and communicating with referring physicians. Since the frequency with which different types of physicians provide initial consultations varies considerably, the panel thought a payment system without specialty differentials requires initial consultation codes to ensure equitable payment.

The panel thought initial consultation codes would be verifiable. But some panelists were concerned that differential payment for consultations might encourage inappropriate, unnecessary, and fragmented care. In response, other panelists pointed out that classifying initial consultations separately would make it possible to track these services and to study the effectiveness and appropriateness of consultative care.

The Commission adopted the panel's definition of initial consultation, but added wording requiring that the consultant document the need for the consultation in the patient's chart.

> **INITIAL CONSULTATION** (all settings) -- A visit in which a physician, at the request of another health care provider, renders an initial opinion regarding a specific problem.
>
> If a consultant initiates diagnostic or therapeutic services, the service qualifies as a consultation. But the consultation code encompasses only the evaluation and management services that are provided.
>
> The consultant must document the need for the consultation, his or her opinion, and any services that have been ordered or performed. In addition, the consultant must document that this information has been communicated to the health care provider who requested the consultation.
>
> The transfer of care from one physician to another does not constitute a consultation. This service should be coded as a new patient visit or an initial visit.

The panel focused its definition on the consultant's initial evaluation of a specific problem(s). A consultant would thus be allowed to bill a patient for more than one initial consultation if he or she was asked to evaluate the patient for unrelated problems on separate occasions. For example, if a patient is referred to a urologist for evaluation of prostatic hypertrophy and, some time later, is referred for evaluation of kidney stones, the urologist would be allowed to bill for two separate consultations.

Consultations must be requested by another health care provider. Self-referrals ("consultations" requested by the patient or the patient's family) would be billed as new patient visits or initial visits. The panel chose this approach because no data are currently available documenting the relationship between work and time for self-referrals. While some visits with self-referred patients may entail the same amount of effort as consultations, the panel concluded that, on average, self-referrals are likely to involve less effort. Panelists pointed out that patients tend to be referred by other health care providers when special expertise is required to diagnose or manage a problem. But patients refer themselves to specialists when they are uncertain about a diagnosis, even though their primary physician may not be. The insurer representatives on the panel pointed out that consultation codes encompassing self-referrals could easily be misused. Any new patient visit could be billed as a consultation since it would not be possible to audit such codes effectively.

The definition is not dependent on whether the consultant only renders an opinion or performs diagnostic or therapeutic services as well. Moreover, diagnostic and therapeutic services performed by the consultant need not be at the specific request of the health care provider who asked for the consultation.[6] The panel noted, however, that the code for the consultation encompasses only evaluation and management services. It does not include technical diagnostic or therapeutic services, which are described by separate CPT codes. If these services are performed at the time of the consultation, they should be billed under separate CPT codes.

The definition requires the consultant to document his or her opinion and services and to communicate this information to the requesting health care provider. This communication could be in the form of a letter. In response to concerns raised by specialty societies, the Commission added wording requiring that the consultant document the need for the consultation in the chart.

Follow-Up Consultation. The Commission departed from the panel's recommendation by establishing a separate class of visit for follow-up consultations. It adopted a narrow definition, however, encompassing only follow-up visits required to complete the evaluation of the patient's problem.

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[6] The panel noted that the purpose of a consultation is to get expert advice. Thus, the requesting health care provider cannot always anticipate the services the consultant should provide.

The panel did not recommend establishing a separate class of codes for follow-up consultations because it was not convinced that these visits entail more effort than nonconsultative follow-up visits. The Commission noted, however, that the Visit Survey shows a substantial difference in effort between follow-up consultations and either established patient office visits or subsequent hospital visits. In addition, specialty societies pointed out that follow-up consultation codes would help consultants bill accurately when more than one visit is required to evaluate a patient's problem and would help payers audit claims when more than one physician is following a patient (making it more likely for physicians to receive payment for concurrent care).

As a compromise between the two positions, the Commission decided to recognize follow-up consultations in the coding system but to limit them to visits that are required to complete the consultant's evaluation.

> **FOLLOW-UP CONSULTATION** (all settings) -- Follow-up visits by the consultant that are required to complete the evaluation of the patient's problem. Other follow-up visits by the consultant for the same problem should be coded as established patient visits or subsequent visits.

Site of Service. The Commission agreed with the panel that payment per level of service should be allowed to vary on the basis of site. But it decided to incorporate site of service directly in the coding system (using the five site groups currently used by CPT) rather than relying on the place of service indicator on the claim form.

There appears to be general agreement that payment per level of service should be allowed to vary on the basis of site. Analyses of data from the Visit Survey and Phase I of the Hsiao study show that site of service can substantially affect the relationship between work and time for visits.[7] More important, site of service has a substantial influence on practice costs. In the Visit Survey, physicians made tenfold greater use of their employees to provide EM services in the office than in the hospital. These differences are important to acknowledge because physicians in different specialties provide different proportions of visits in different sites.

Two approaches could be used to vary payment on the basis of site: (1) the coding system could use separate classes of codes for different site groups or (2) site of service could be identified by the place of service indicator on the claim form. The panel's decision to use the latter approach was based on arguments supporting the recommendations of the AMA Ad Hoc Committee on Visits and Levels of Service. It reasoned that since physicians are now required to record site of service on Medicare claim forms, this approach would be simpler, less expensive, more accurate (physicians could identify the exact site rather than the site group) and more flexible (new sites could be recognized immediately rather than waiting for changes in CPT). Moreover, it would result in fewer visit codes.

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[7] This effect depends on the way encounter time is defined for inpatient visits, suggesting that inpatient and outpatient visits differ not in terms of effort but rather in the proportion of total time the physician spends performing face-to-face services.

The Commission chose the alternative approach, using separate classes of codes for different site groups, for several reasons. First, it would simplify assigning relative values to visits in different sites under the Medicare Fee Schedule. Second, some payers might not include site of service on their claim forms and others might not recognize payment differentials if site was not incorporated in the coding system.[8] Third, payment per level of service would likely be the same with the two approaches since data related to effort and practice costs are not available for visits in all sites and are likely to be comparable in similar sites. Finally, classes of codes for different site groups would be verifiable, would be likely to be used appropriately by physicians, and would help generate important data about visits. The CPT Editorial Panel also expressed its preference for this approach after the completion of the consensus process.

Patient Age. The Commission followed the panel's recommendation not to establish separate classes for visits with patients in different age groups. Patient age is clear, verifiable, and would be likely to be used appropriately by physicians. But it does not appear to influence the effort or practice costs (use of physician-employed ancillary personnel) involved in visits.

Cognitive Impairment and Physical Disability. The Commission followed the panel's recommendation not to create a separate class of visit for patients with cognitive or physical impairment. Data from the Visit Survey show that cognitive/physical impairment does not affect the effort involved in visits or the use of nonphysician practitioners. It does, however, affect the duration of some types of visits. Therefore, the Commission supported using a special modifier to increase payment for visits with impaired patients (see below).

Levels of Service

> *In the Commission's model coding system, visits in each class are differentiated by five levels of service (Table 8-1). The same five levels of service apply to all classes of visits.*

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[8] The Omnibus Budget Reconciliation Act of 1989, which established the Medicare Fee Schedule, does not specify that fees should vary on the basis of site.

The levels of service are defined on the basis of content and time.

- *The content descriptors reflect the complexity of medical decisionmaking and the extent of EM services provided during visits.*

- *The time is "typical physician encounter time." In outpatient settings, this reflects the time it takes physicians, on average, to perform the face-to-face portion of the content of each level of service. In inpatient settings, it reflects the time it takes physicians, on average, to perform the portion of the content of each level of service that takes place at the bedside and on the patient's unit or floor.*

The Commission's coding system uses five levels of service to differentiate visits within each class. The definitions of these levels, which incorporate content descriptors and typical physician encounter time, are the core of the coding system. They are a key element in assigning accurate resource-based relative values to visits and providing physicians with the information they need to use visit codes uniformly.

Under this system, a total work value would be assigned to each visit code using the typical encounter time in the level of service and the relationship between encounter time and total work for the class of the visit. The work/time relationship varies for the different classes of visits. Consequently, payment per level of service would also vary, reflecting differences in effort.

Since the classes of visits account for differences in effort, the content descriptors in the levels of service need only account for why visits within classes differ in terms of time. The Commission sought to define levels of service so that they would:

- be clinically meaningful and easy for physicians to use;

- provide physicians and payers with clear guidelines for distinguishing one level of service from adjacent levels that typically take more or less time;

- use content descriptors that are congruent with each level's typical time;

- not put undue emphasis on time;

- facilitate verification of claims and discourage gaming;

Table 8-1. Commission Model Levels of Service

Level 1	Level 2	Level 3	Level 4	Level 5
Evaluation and management of a problem with straightforward diagnosis and treatment.	Evaluation and management of a problem requiring the consideration of a limited number of potential diagnoses or treatment options.	Evaluation and management of a *single* problem requiring the consideration of multiple potential diagnoses or treatment options. **OR** Evaluation, management, and integration of *several* straightforward problems.	Evaluation and management of a complex *single* problem requiring the consideration of an extensive differential diagnosis and multiple treatment options. **OR** Evaluation and management of *multiple* problems requiring a complex management plan integrating multiple therapies and/or care among multiple providers.	Evaluation, management, and integration of one or more highly complex problems requiring extensive skill and judgment, including the consideration of an extensive differential diagnosis and multiple treatment options.
This visit includes minimal or no history and physical examination, counseling, diagnostic testing, or coordination of care.	This visit includes a problem-focused history and physical examination and/or counseling, diagnostic testing, and coordination of care.	This visit includes a detailed single-system or general multisystem history and physical examination and/or counseling, diagnostic testing, and coordination of of care.	This visit includes a comprehensive single-system or detailed multisystem history and physical examination and/or counseling, diagnostic testing, and coordination of care.	This visit includes a comprehensive single-system or multisystem history and physical examination, review of data from multiple sources, and/or counseling, diagnostic testing, and coordination of care.
The typical encounter time for a Level 1 visit is *5 minutes*.	The typical encounter time for a Level 2 visit is *15 minutes*.	The typical encounter time for a Level 3 visit is *30 minutes*.	The typical encounter time for a Level 4 visit is *45 minutes*.	The typical encounter time for a Level 5 visit is *60 minutes*.
For outpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services face-to-face with the patient and/or family.	For outpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services face-to-face with the patient and/or family.	For outpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services face-to-face with the patient and/or family.	For outpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services face-to-face with the patient and/or family.	For outpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services face-to-face with the patient and/or family.
For inpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services at the bedside and on the patient's unit or floor.	For inpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services at the beside and on the patient's unit or floor.	For inpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services at the bedside and on the patient's unit or floor.	For inpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services at the bedside and on the patient's unit or floor.	For inpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services at the bedside and on the patient's unit or floor.

- apply, if possible, to all specialists who provide visits, to all classes of visits, and to visits in all sites (with the exception of visits for which specialized codes are used).

Many decisions were involved in developing definitions for the levels of service. These included: (1) whether one or multiple sets of levels should be used for the different classes of visits; (2) the number of levels that should be used; (3) how content descriptors should be defined; and (4) how typical time should be expressed (the measure of time, whether it should apply only to the physician's input or also to input by the physician's employees, and whether it should be expressed as mean time or as ranges of time). The discussion below summarizes the reasoning that led to the Commission's decisions in each of these areas.

Applicability of Levels of Service to Different Classes of Visits. The Commission followed the consensus panel's recommendation to use the same levels of service for all classes of generic visits.[9]

In the interest of simplicity, the panel sought to develop one set of levels of service that would be applicable to all classes of visits. Panelists addressed this issue explicitly in meetings and Delphi questionnaires, in which they assessed the applicability of the levels of service to the visits they provide and modified the wording to make the definitions clinically meaningful for all classes of visits. After making refinements in response to comments from specialty societies and convening an advisory panel of physicians, the Commission concluded that the panel's goal had been achieved. No specialty that uses generic visit codes noted problems applying the refined levels to different classes of visits, and none of the physicians on the advisory panel could identify classes of visits in which the refined levels of service would not apply.

Having one set of levels of service does not mean they would be used in the same proportions when applied to different classes of visits or when used by physicians in different specialties. For example, Level 1 would probably be used frequently for established patient office visits but rarely, if ever, for initial consultations. Level 4 initial consultations would probably be billed more frequently by infectious disease specialists than by urologists.

The uniform set of levels of service is not intended to stand alone. Specialty-specific examples will be developed to help physicians apply the levels of service in their practices. Consumer organizations and HCFA could translate the levels of service into lay language to foster patient understanding. HCFA and private insurers could develop documentation criteria to provide payers with guidance in verifying claims. It should be pointed out, however, that with a time-incorporating coding system, payers need not rely only on content descriptors to review claims. Physicians record encounter times for different classes of visits routinely in surveys such as the National Ambulatory Medical Care Survey. If the typical time and the content descriptors in the levels of service are congruent, the times in the survey could be used to predict the mix of codes each specialty would be expected to use for billing. Insurers could then screen each physician's EM claims by comparing them to the profile for his or her specialty.

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[9] The Commission's levels of service are not meant to apply to specialized visits, such as emergency department, critical care, ophthalmology, psychiatry, and preventive medicine visits.

Numbers of Levels of Service. The Commission followed the panel's recommendation to use five levels of service for all classes of visits. The panel thought this number reflects the spectrum of visits physicians in different specialties provide. Individual physicians may use only a few levels of service. But in a payment system without specialty differentials, the menu of levels must be broad enough so that each physician can choose codes that accurately describe his or her visit services. Panelists were concerned that patients with complex medical problems might have difficulty obtaining access to care if the coding system does not meet this requirement.

Some panelists wanted more than five levels of service. The panel rejected this option, however, because it was unable to develop six definitions that could be clearly differentiated by physicians and audited effectively by payers.

Content Descriptors. The Commission's content descriptors (Table 8-1) closely follow those developed by the consensus panel. Some refinements were made to respond to concerns raised by specialty societies and to incorporate suggestions of the advisory panel of physicians.

The purpose of the content descriptors is to reflect the content of visits that typically take different amounts of time.[10] The panel developed descriptors based on the complexity of medical decisionmaking (the extent of the differential diagnosis and the number of treatment options) and the extent of EM services provided (the history and physical examination).[11] It chose to incorporate these criteria in the descriptors because they are common to all types of visits and are likely to be closely correlated with the duration of visits. The descriptors for Levels 3 and 4 have separate modules for single and multiple problems. The panel thought this was necessary because visits in which one complex problem or multiple simpler problems are addressed frequently take the same amount of time.

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[10] The descriptors do not need to reflect differences in effort, since this is accounted for by the classes of visits.

[11] The panel considered assigning typical times to current CPT content descriptors. However, since data from the Visit Survey indicate that these descriptors do not correlate well with time, the panel developed new content descriptors.

To avoid sending mixed messages and confusing physicians, the consensus and advisory panels chose to exclude criteria that do not correlate well with the duration of visits. For example, they did not incorporate severity of illness in the descriptors. Some problems, such as meningitis, are very severe but easy to evaluate and manage. Others, such as chronic fatigue and depression, are not severe but take up a lot of the physician's time.

The panels also tried to avoid incorporating criteria that could encourage "gaming." For example, if criteria such as medications or diagnostic testing were incorporated in the definitions, physicians would be able to jump from one level to another by ordering a test or prescribing a medication. This could not only encourage unnecessary testing or prescribing but could also result in double payment (if the physician billed for a higher level of service as well as for the professional component of a test or for administering a parenteral drug).[12]

In response to comments from specialty societies, the Commission refined the wording in the Level 5 descriptor to make it applicable to complex problems involving single or multiple organ systems. The advisory panel further refined the descriptors to make them more concise, to make the distinction between adjacent levels more precise, and to incorporate some of the language in the proposed CPT system.

Encounter Time. The Commission followed the panel's recommendation to express time as encounter time in the levels of service. However, the Commission changed the definition of encounter time from "face-to-face time" to "floor time" for inpatient visits and consultations.

The consensus panel evaluated five measures of time that could be used in the definitions for levels of service.

ENCOUNTER TIME	The time the provider spends performing EM services face-to-face with the patient, the family, or both.
DAY TIME	The time the provider spends performing face-to-face and non-face-to-face EM services on the day of the visit.

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[12] Although the advisory panel added diagnostic testing, counseling, and coordination of care to the definitions, the level of service does not depend on the extent of these services. Thus, physicians cannot jump a level by performing these services unless the complexity of the problem warrants this.

TOTAL TIME	The time the provider spends performing face-to-face and non-face-to-face EM services related to the visit before, on, and after the day of the visit.
SCHEDULED TIME	The amount of time scheduled for the visit.
OFFICE TIME	The time the patient is in the office (excluding waiting room time).

The panel quickly rejected scheduled time and office time. It concluded that both correlate poorly with the EM services provided to individual patients and have considerable potential for inappropriate use. Moreover, they are not applicable to visits in all sites and could encourage physicians to adopt practice styles that are either inefficient or detrimental to quality of care or patient satisfaction.

Of the three remaining options, the panel decided to use encounter time because it appeared to meet the goals of the visit coding system better than day time or total time. Encounter time is a clear concept that providers, payers, and beneficiaries are likely to interpret uniformly. It is also the measure of time most likely to be estimated accurately by physicians. Physicians would have much more difficulty estimating total time because they would have to predict the time involved in performing past and future EM services. In addition, encounter time would be least likely to be used inappropriately by physicians and could be audited most effectively by insurers.

The panel carefully considered whether a coding system that used encounter time would be likely to result in accurate and equitable payment. Under the Medicare Fee Schedule, payment for visits will be based on *total work* (the work before, during, and after the actual patient/family encounter), regardless of the measure of time used in the levels of service. The measure of time will function as an indicator (or predictor) of total work. Consulting data from the Visit Survey, the panel noted that encounter time appears to be as good as total time in predicting total work.[13] This is probably because, for a given type of visit, physicians in different specialties appear to spend a similar proportion of time in the patient/family encounter.

The Commission modified the panel's recommendation by changing the definition of encounter time from face-to-face time to "floor time" (the time the physician spends performing EM services at the bedside and on the patient's unit or floor) for inpatient visits and consultations. It did this to make the times and content descriptors in the levels of service congruent for visits in all sites. Data from the Visit Survey show that face-to-face time makes up a greater proportion of total time for office visits than for hospital visits. Thus, the face-to-face time associated with the content of a Level 3 visit, for example, would have to be different for office and hospital visits. Office face-to-face time and hospital floor time are proportionally similar, however. Each makes up approximately 80 percent of total time. If encounter time is defined as face-to-face time in the office and as floor time in the hospital, time and content should be congruent for outpatient and inpatient visits.

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[13] Encounter time appears to predict total work as well for hospital visits as for office visits, and as well for consultations as for nonconsultative visits.

Using floor time in inpatient settings should also make the levels of service more applicable to physicians in different specialties. Physicians in different specialties spend similar proportions of total time on the patient's floor during inpatient visits. But they differ in the way they allocate their time on the floor. Some spend proportionally more time at the patient's bedside, whereas others spend proportionally more time at the nursing station (reviewing records, writing orders, communicating with nursing and house staff, and charting). If face-to-face time were used for inpatient visits and consultations, some specialties might have problems using the codes (because the time and content in the levels of service would not be congruent) and some specialties might not receive equitable payment.

Physician Time. The Commission followed the consensus panel's recommendation to use physician time rather than all-provider time in the levels of service.

The consensus panel considered whether the measure of time in the levels of service should apply to:

PHYSICIAN TIME	The time the physician spends performing EM services; or
ALL-PROVIDER TIME	The time the physician and his or her employees spend performing EM services.

The panel decided to use physician time because this option met the goals of the visit coding system better than all-provider time. Physician time is a clear concept that is likely to be interpreted uniformly by physicians, payers, and patients. Moreover, there was strong consensus that physicians can estimate the time they spend performing EM services more accurately than they can estimate their employees' time. For example, physicians often do not know how much time their employees spend providing EM services for individual visits and may have difficulty distinguishing between administrative and clinical functions performed by their employees. The panel's insurer representatives favored basing codes on physician time because they thought such codes would be likelier to be used appropriately by physicians and could be audited more effectively by payers.[14]

Payment under the Medicare Fee Schedule will account for the costs of nonphysician employees who perform EM services in a typical practice, regardless of whether physician time or all-provider time is used in the coding system. With a physician-time coding system, nonphysician costs would be assigned as practice costs. After reviewing data from the Visit Survey, the panel concluded that this approach would be likely to result in accurate and equitable payment. Nonphysicians appear to perform similar EM services in practices in different specialties. Moreover, for each type of visit, the proportion of all-provider time accounted for by nonphysicians appears to be similar across specialties. While this proportion is not the same for all types of visits, the Commission's coding system would account for these differences. For example, the Visit Survey demonstrates that the ratio of nonphysician time to all-provider time is greater for office visits than for hospital visits. Since the coding system uses separate classes of codes for office and hospital visits, practice costs could be assigned that reflect differences in the use of nonphysician practitioners in each site.

Although the panel thought a physician-time coding system would be equitable to physicians in most practices, some members remained concerned that the system could be inequitable to physicians who make greater-than-average use of highly trained nonphysician personnel. If the types of visits that involve more input from these providers can be identified, separate classes could be created to describe these visits in the coding system. But the panel was skeptical that such codes (for example, specialized counseling/education codes or codes for functional assessments) would be recognized by insurers for separate payment.

Levels of service defined on the basis of physician time would probably not be applicable to visits provided solely by nonphysician practitioners (NPPs). Data from the Visit Survey and other sources suggest that physicians and NPPs would take different amounts of time to perform the content of a given level of service. Consequently, in a physician-time coding system, time and content might not be congruent for visits provided by NPPs. If insurers allow NPPs to bill under the new coding system, they should consider either removing the times from NPP codes or changing them (to reflect the time it takes NPPs to provide the content of each level of service).

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[14] Surveys of physicians routinely collect data about physician encounter time but not about all-provider encounter time.

Typical Mean Time. The Commission followed the consensus panel's recommendation to express physician encounter time as typical mean time (rather than as ranges of time) in the levels of service.

The consensus panel examined the following three options for expressing physician encounter time in the definitions for levels of service:

- typical mean time,
- nonoverlapping ranges of time, and
- overlapping ranges of time.

The panel decided to use typical mean time because it did not want time to be the dominating factor in defining levels of service. Under the new coding system, physicians would be paid for the content of a level of service, which takes physicians, on average, a certain amount of time to provide.[15] The panel did not want the coding system to give physicians the opportunity to upcode if they take a few minutes longer to provide the content of a level of service. Nor did it want to give insurers an opportunity for downcoding.

Reviewing the options in this context, the panel concluded that typical mean time places the proper emphasis on time in the definitions for levels of service. It clearly represents an average time (the middle of an implicit range) and allows for variation in the amount of time it takes to provide the content of a level of service. But by not specifying the limits of the range, it discourages upcoding or downcoding on the basis of time and encourages physicians to turn to the content descriptors to choose the right code for billing.[16]

Specific Times Assigned to the Five Levels of Service. The members of the consensus panel used their clinical expertise and judgment to assign typical physician encounter times to the five levels of service. The panel was not confident, however, that these times accurately reflect how long it takes physicians, on average, to perform the encounter portion of the content of each level of service. The congruence of time and content for the levels of service could be validated with either specialty society questionnaires or through a national multispecialty physician survey.

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[15] This type of coding system would reward efficient physicians who provide the content of a level of service in less time.

[16] The Commission pointed out that typical mean time should not be expressed as "less than" or "more than" for Level 1 and Level 5 visits, as was suggested in HCFA's *Model Fee Schedule for Physicians' Services* (HCFA 1990). Such wording might make physicians feel justified in upcoding if they take a minute longer to provide the content of a Level 1 or Level 4 service.

Special Patient Characteristics/Needs

> *Since it may take longer to provide the content of a level of service for patients with communication barriers, disabling cognitive or physical impairment, or an unusual need for counseling or coordination of care, the Commission recommends that physicians be allowed to code for these visits using a special patient characteristics/needs modifier. Special patient characteristics/needs should be documented in the medical record.*

The Commission agreed with the consensus panel that special patient characteristics/needs should be recognized in the visit coding system. It modified the panel's proposal, however, by recommending that a special modifier be used rather than allowing physicians to code for these visits using a level of service that is one level higher than the content provided.

The consensus panel accounted for special patient characteristics and needs in the coding system to protect access to care for these types of patients and to provide more equitable payment to the physicians who care for them. Reviewing their own clinical experience, panelists in different specialties commented that it would take longer to provide the content of a level of service to patients with communication barriers, disabling cognitive or physical impairment, or an unusual need for counseling or coordination of care. This conclusion was supported to some extent by data from the Visit Survey, which show that some types of visits take longer when the patient is cognitively or physically impaired.

A few panelists thought that recognizing special patient characteristics/needs in the coding system would be discriminatory, in that it would identify certain types of patients and make them responsible for higher copayments. But this view was not shared by the vast majority of panelists. They pointed out that a coding system that does not recognize special patient characteristics and needs could be more discriminatory since physicians might be less likely to spend the additional time necessary to provide these patients with medical care. In a payment system without specialty differentials, payment would be especially inequitable to physicians in specialties that care for a high proportion of special needs patients.

The panel considered two approaches for accounting for special patient characteristics or needs: allowing physicians to code for these visits using a level of service that is one level higher than the content provided or using a special modifier. The panel chose the first approach because it would prevent discordance between the time and content descriptors in the levels of service. In addition, the panel was concerned about three potential problems with a modifier: payers might not recognize the modifier for differential payment; physicians might receive double payment if they upcode on the basis of time and also use the modifier; and no data are currently available to calibrate a modifier accurately.

The Commission chose to use a modifier because this approach was supported by societies representing specialties that see a high proportion of special needs patients. These societies noted that the modifier would provide better data about visits provided to patients with special characteristics/needs and would allow more precise calibration of differential payment (if data become available to do so).

The Commission adopted the consensus panel's definitions of special patient characteristics/needs. These definitions are verifiable and do not rely solely on formal evaluations. In the interest of good patient care, special characteristics/needs should be documented in the medical record. The Commission specified, however, that documentation of a stable impairment should not be required at every visit.

> **COMMUNICATION BARRIERS** -- Impairment of hearing, vision, speech, or language sufficient to interfere with understanding of the medical interview or instructions by the physician's staff. Impairment must be severe enough to require use of special communication methods, such as amplifiers, communication boards, large type instructions, written communication, or translators. Use of special communication methods must be documented in the medical record.
>
> **COGNITIVE IMPAIRMENT** -- Moderate to severe impairment of cognition as measured by formal mental status evaluation using: (1) a standardized mental status questionnaire, such as the Folstein Mini-Mental State Exam or the Pfeiffer Short Portable Mental Status Questionnaire; or (2) a clinical interview documenting disorder of memory, comprehension, calculation, abstraction, or judgment.
>
> **PHYSICAL IMPAIRMENT** -- Chronic impairment requiring the assistance of another person or assistive devices to complete two or more of the following activities of daily living: bathing, dressing, grooming, eating, transfers, or toileting. Documentation of impairment must be made during the medical interview or by use of standard questionnaires such as the Lawton Physical Self-Maintenance Scale or the Katz Activities of Daily Living Scale.
>
> Documentation of stable, chronic special patient characteristics and needs is not required at each visit.

COMPARISON OF THE COMMISSION AND CPT VISIT CODING SYSTEMS

When the PPRC/AMA Consensus Process on Coding for EM Services was completed, both the Commission and the CPT Editorial Panel reviewed the consensus panel's recommendations. The two groups adopted many of the panel's proposals and, in some cases, made similar modifications. Thus, in areas such as classes of visits and special patient characteristics/needs, the Commission and CPT coding systems are largely consistent. However, the levels of service are substantially different in the two coding systems. The Commission uses the same five levels of service for all classes of visits (Table 8-1), whereas in the CPT system, the number, content descriptors, and times in the levels of service are different for each class of visit (Table 8-2).

Table 8-2. Levels of Service in CPT Pilot Study

	Level I	Level II	Level III	Level IV	Level V
New Patient Office Visit	Evaluation and management of one or more self-limited or minor problems.	Evaluation and management of one or more problems of low to moderate severity.	Evaluation and management of one or more problems of moderate severity.	Evaluation and management of one or more problems of moderate to high severity.	Evaluation and management of one or more problems of moderate to high severity.
	This level of service requires: a problem-focused history and a problem-focused examination and appropriate counseling.	This level of service requires: an expanded problem-focused history and an expanded problem-focused examination and appropriate counseling.	This level of service requires: a detailed history and a detailed examination and appropriate counseling.	This level of service requires: a complete history and a complete examination and appropriate counseling.	This level of service requires: a complete history and a complete physical examination and appropriate counseling.
	Medical decisionmaking is straightforward, diagnostic testing is usually limited, and coordination of care with other providers or agencies is rarely necessary.	Medical decisionmaking is straightforward, diagnostic testing is usually limited, and coordination of care with other providers or agencies is rarely necessary.	Medical decisionmaking is of low complexity and includes considering a limited number of diagnoses or weighing a limited number of management options. Diagnostic testing is usually limited and coordination of care with other providers or agencies is occasionally necessary.	Medical decisionmaking is moderately complex and includes considering multiple diagnoses or weighing multiple management options. Diagnostic testing may be extensive and coordination of care with other providers or agencies is frequently necessary.	Medical decisionmaking is highly complex, requires extensive skill and judgment, and includes considering multiple diagnoses or weighing multiple management options. Diagnostic testing may be extensive and coordination of care with other providers or agencies is frequently necessary.
	Physicians, on average, spend 10 minutes face-to-face with the patient and/or family.	Physicians, on average, spend 20 minutes face-to-face with the patient and/or family.	Physicians, on average, spend 30 minutes face-to-face with the patient and/or family.	Physicians, on average, spend 45 minutes face-to-face with the patient and/or family.	Physicians, on average, spend 60 minutes face-to-face with the patient and/or family.
Established Patient Office Visit	Evaluation and management of one or more minimal problems, which may not require the presence of a physician, but which is provided under the physician's supervision (e.g., an injection, dressing change, blood pressure monitoring).	Evaluation and management (including follow-up and/or periodic reevaluation) of one or more self-limited or minor problems.	Evaluation and management (including follow-up and/or periodic reevaluation) of one or more problems of low to moderate severity.	Evaluation and management (including follow-up and/or periodic reevaluation) of one or more problems of moderate to high severity.	Evaluation and management (including follow-up and/or periodic reevaluation) of one or more problems of moderate to high severity.
		This level of service requires: a problem-focused history and/or a problem-focused examination and/or appropriate counseling.	This level of service requires: an expanded problem-focused history and/or an expanded problem-focused examination and/or appropriate counseling.	This level of service requires: a detailed history and/or a detailed examination and/or appropriate counseling.	This level of service requires: a complete history and/or a complete examination and/or appropriate counseling.
		Medical decisionmaking is straightforward, diagnostic testing is usually limited and coordination of care with other providers or agencies is rarely necessary.	Medical decisionmaking is of low complexity and includes considering a limited number of diagnoses or weighing a limited number of management options. Diagnostic testing is usually limited and coordination of care with other providers or agencies is occasionally necessary.	Medical decisionmaking is moderately complex and includes considering multiple diagnoses or weighing multiple management options. Diagnostic testing may be extensive and coordination of care with other providers or agencies is frequently necessary.	Medical decisionmaking is highly complex, requires extensive skill and judgment, and includes considering multiple diagnoses or weighing multiple management options. Diagnostic testing may be extensive and coordination of care with other providers or agencies is frequently necessary.
	On average, 5 minutes are spent performing or supervising these services with the patient and/or family.	Physicians, on average, spend 10 minutes face-to-face with the patient and/or family.	Physicians, on average, spend 15 minutes face-to-face with the patient and/or family.	Physicians, on average, spend 25 minutes face-to-face with the patient and/or family.	Physicians, on average, spend 40 minutes face-to-face with the patient and/or family.

Table 8-2. -Continued

	Level I	Level II	Level III	Level IV	Level V
Initial Hospital Visit	Evaluation and management of a patient admitted with one or more problems of low severity.	Evaluation and management of a patient admitted with one or more problems of moderate severity.	Evaluation and management of a patient admitted with one or more problems of high severity.		
	This level of service requires: a complete history, a complete examination, and appropriate counseling.	This level of service requires: a complete history, a complete examination, and appropriate counseling.	This level of service requires: a complete history, a complete examination, and appropriate counseling.		
	Medical decisionmaking is straightforward or of low complexity and includes considering a limited number of management options. Diagnostic testing is usually limited and coordination of care with other providers or agencies is rarely necessary.	Medical decisionmaking is moderately complex and includes considering multiple diagnoses or weighing multiple management options. Diagnostic testing is usually moderate and coordination of care with other providers or agencies is occasionally necessary.	Medical decisionmaking is highly complex, requires extensive skill and judgment, and includes considering multiple diagnoses or weighing multiple management options. Diagnostic testing may be extensive and coordination of care with other providers or agencies is frequently necessary.		
	Physicians, on average, spend 30 minutes at the bedside and/or on the patient's floor or unit.	Physicians, on average, spend 50 minutes at the bedside and/or on the patient's floor or unit.	Physicians, on average, spend 70 minutes at the bedside and/or on the patient's floor or unit.		
Subsequent Hospital Visit	Reevaluation and management of a patient who is stable, recovering or improving.	Reevaluation and management of a patient who is inadequately responding to therapy or who has developed a minor complication.	Reevaluation and management of patient who is unstable or has developed a significant complication or a significant new problem.		
	This level of service requires: a problem-focused interval history and/or a problem-focused examination and/or appropriate counseling.	This level of service requires: an expanded problem-focused interval history and/or an expanded problem-focused examination and/or appropriate counseling.	This level of service requires: a detailed interval history and/or a detailed physical examination and/or appropriate counseling.		
	Medical decisionmaking is straightforward or of low complexity and includes considering a limited number of diagnoses or weighing a limited number of management options. Diagnostic testing is usually limited and coordination of care with other providers or agencies is rarely necessary.	Medical decisionmaking is moderately complex and includes considering multiple diagnoses or weighing multiple management options. Diagnostic testing is usually moderate and coordination of care with other providers or agencies is occasionally necessary.	Medical decisionmaking is highly complex, requires extensive skill and judgment, and includes considering multiple diagnoses or weighing multiple management options. Diagnostic testing may be extensive and coordination of care with other providers or agencies is frequently necessary.		
	Physicians, on average, spend 15 minutes at the bedside and/or on the patient's floor or unit.	Physicians, on average, spend 25 minutes at the bedside and/or on the patient's floor or unit.	Physicians, on average, spend 35 minutes at the bedside and/or on the patient's floor or unit.		

Table 8-2. -Continued

	Level I	Level II	Level III	Level IV	Level V
Initial Consultation (Office and Inpatient)	A consultation for a patient with one or more problems of low severity.	A consultation for a patient with one or more problems of moderate severity.	A consultation for a patient with one or more problems of moderate to high severity.	A consultation for a patient with one or more problems of moderate to high severity.	
	This level of service requires: a problem-focused history and/or a problem-focused examination and/or appropriate counseling.	This level of service requires: an expanded problem-focused history and/or an expanded problem-focused examination.	This level of service requires: a detailed history and/or a detailed examination and/or appropriate counseling.	This level of service requires: a complete history and/or a complete examination and/or appropriate counseling.	
	Medical decisionmaking is straightforward or of low complexity and includes considering a limited number of diagnoses or weighing a limited number of management options.	Medical decisionmaking is straightforward or of low complexity and includes considering a limited number of diagnoses or weighing a limited number of management options.	Medical decisionmaking is moderately complex and includes considering multiple diagnoses or weighing multiple management options.	Medical decisionmaking is highly complex, requires extensive skill and judgment, and includes considering multiple diagnoses or weighing multiple management options.	
	The number of records and tests that are reviewed is limited and it is rarely necessary to coordinate care with providers other than the attending physician.	The number of records and tests that are reviewed is moderate and it is occasionally necessary to coordinate care with providers other than the attending physician.	The number of records and diagnostic tests that are reviewed is extensive and it is frequently necessary to coordinate care with providers other than the attending physician.	The number of records and diagnostic tests that are reviewed is extensive and it is frequently necessary to coordinate care with providers other than the attending physician.	
	Physicians, on average, spend 30 minutes face-to-face with the patient and/or family.	Physicians, on average, spend 40 minutes face-to-face with the patient and/or family.	Physicians, on average, spend 60 minutes face-to-face with the patient and/or family.	Physicians, on average, spend 80 minutes face-to-face with the patient and/or family.	
Follow-up Consultaation (Office and Inpatient)	A follow-up visit by a consultant prior to the completion of his/her consultation and the rendering of a final opinion for a patient with one or more problems of low severity.	A follow-up visit by a consultant prior to the completion of his/her consultation and the rendering of a final opinion for a patient with one or more problems of low severity.	A follow-up visit by a consultant prior to the completion of his/her consultation and the rendering of a final opinion for a patient with one or more problems of low severity.		
	Medical decisionmaking is straightforward or of low complexity and includes considering a limited number of diagnoses or weighing a limited number of management options.	Medical decisionmaking is straightforward or of low complexity and includes considering a limited number of diagnoses or weighing a limited number of management options.	Medical decisionmaking is straightforward or of low complexity and includes considering a limited number of diagnoses or weighing a limited number of management options.		

After reviewing the CPT levels of service and consulting with an advisory panel of physicians, the Commission raised several concerns about the approach the CPT Editorial Panel used. It noted that the complexity of CPT's levels of service might be confusing to physicians, payers, and beneficiaries. It thought that such complexity was not necessary to accomplish the goals of EM coding reform and could, in fact, compromise the most important goal of coding reform: to develop codes that would be used uniformly.

The CPT system uses 26 different definitions of levels of service incorporating 13 different encounter times to code for six classes of visits.[17] One particularly confusing aspect of this system is that a given level of service is defined differently for the various classes of visits. For example, CPT's Level 2 service has a different content descriptor and a different encounter time, depending on whether it is used for a new patient office visit, an established patient office visit, an initial hospital visit, and so forth. With such a coding system, physicians might focus only on the encounter times in the codes, learn only one set of levels of service but apply them to visits in all classes/sites, or develop arbitrary crosswalks from the current levels of service in CPT. Such coping strategies would put undue emphasis on time and would make it unlikely that physicians would use the new codes uniformly.

The complexity of CPT's system does not appear to be necessary to develop levels of service that are applicable to different classes of visits. The work of the consensus panel, along with comments from specialty societies and practicing physicians, convinced the Commission that this goal could be accomplished with a far simpler approach--one that uses a uniform set of levels of service.

The multiple definitions of levels of service in CPT's system also do not appear to be necessary to facilitate auditing or verification. With a time-incorporating coding system, payers need not rely only on content descriptors to review claims. Insurers could develop screening profiles using encounter times in physician surveys. If the content descriptors and typical times in the levels of service are congruent, these profiles could be used to predict the mix of codes each specialty would be expected to use for billing.

The CPT Editorial Panel has not yet completed its work. The AMA and HCFA are currently pilot-testing CPT's proposed codes, and CPT expects to make modifications based on the results of this study. The Commission hopes these refinements will meet the needs of a resource-based payment system.

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[17] CPT has not yet developed levels of service for home visits, skilled and other types of nursing home visits, or confirmatory consultations.

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CHAPTER 9

PAYMENT TO PODIATRISTS AND OPTOMETRISTS

Under the Omnibus Budget Reconciliation Act of 1989 (OBRA89), Medicare will pay for physicians' services under a fee schedule based on resource costs. The fee schedule will apply not only to doctors of medicine and osteopathy (MDs and DOs) but to limited license practitioners (LLPs) defined as "physicians" under the Medicare statute: dentists, podiatrists, optometrists, and certain chiropractors.

In its *1990 Annual Report to Congress*, the Commission resolved how payment to some of these practitioners should be implemented under the Medicare Fee Schedule. It determined that because relative work values and cross-specialty links for oral and maxillofacial surgeons are available from the study of resource-based relative values by William Hsiao and his colleagues at Harvard University, these practitioners should be paid under the fee schedule on the same basis as MDs and DOs. It also determined that a separate fee schedule should be established for the single Medicare-covered service provided by chiropractors.

The Commission deferred making a decision on payment to podiatrists and optometrists, however, because less was known about their services. This chapter describes further analyses regarding these services and makes recommendations concerning payment. The Commission has not commented on other aspects of Medicare policy affecting these practitioners, such as service coverage and competency to perform specific services, that do not fall within its mandate.

RECOMMENDATION

Podiatrists and optometrists should be paid under the Medicare Fee Schedule, using the same relative values and conversion factors as applied to doctors of medicine and osteopathy.

CURRENT MEDICARE PAYMENT TO PODIATRISTS AND OPTOMETRISTS

This section briefly reviews the scope of services podiatrists and optometrists provide to Medicare beneficiaries and compares charges for these services with those of MDs.[1]

Podiatrists

Medicare payment to podiatrists is concentrated in three areas: surgical procedures involving the foot, office visits, and diagnostic radiology. These services are also frequently provided by various MD specialties, including orthopedic and general surgery, general and family practice, internal medicine, dermatology, and radiology. For many of these services, however, podiatrists account for a substantial portion of allowed charges. For example, payment to podiatrists came close to 90 percent of allowed charges for debridement of toenails (CPT code 11710).

Average allowed charges vary with no consistent pattern across practitioner groups. For some procedures, podiatrists, on average, are paid less than MDs; for others, they are paid more. In 1988, allowed charges to podiatrists came to slightly more than $475 million, or 1.7 percent of the total for Part B physician services.

Optometrists

Since 1981, optometrists have been defined as "physicians" for services related to aphakia (the absence of the eye's natural crystalline lens).[2] This definition was broadened in 1987 and optometrists may now be paid for all Medicare-covered services that they are authorized to provide under state law.[3]

Unlike charges to podiatrists, optometry charges are concentrated among relatively few procedure codes. These include evaluation and management (EM) services and a limited number of diagnostic tests.[4] Optometrists generally account for only a relatively small percentage of allowed charges for these codes. With few exceptions, ophthalmologists have higher average allowed charges than optometrists for the same procedure codes. In 1988, allowed charges to optometrists totaled approximately $150 million, or just over 0.5 percent of the total for Part B physician services.

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[1] This material was covered in greater detail in Chapter 9 of the Commission's 1990 annual report.

[2] These services included case history, external examination, ophthalmoscopy, biomicroscopy, tonometry, ocular motility, binocular function, and ophthalmic prostheses.

[3] Routine eye exams and refractions are not covered by Medicare. Eye exams are covered only for patients with a complaint or symptom of eye disease or injury.

ANALYSES TO COMPARE SERVICES

The Commission has long held that physicians should be paid the same when they provide the same service. This principle suggests that if the services of podiatrists and optometrists are the same as those provided by MDs and DOs, then the payment should be the same. From an operational standpoint, adherence to this principle could be interpreted as requiring judgments about whether specific services billed under the same procedure codes by different practitioners are the same. The Commission found no empirical evidence, however, to guide it in making such determinations.

A number of approaches were explored that were thought to hold promise for developing such information. These included consulting with relevant groups representing podiatrists and optometrists, comparing visit pattern data collected from podiatrists and surgical specialties to develop relative values for specific surgical global services, and requesting comments on the report of the consensus process to revise codes for visits and consultations. The Commission also looked to health maintenance organizations (HMOs) as a possible source of objective data. Initial discussions, however, revealed that HMOs typically limit optometrists' practice to performing refractions. Since there are essentially no overlapping services between optometrists and ophthalmologists in this setting, this experience was not helpful in assessing similarities.

Finally, staff considered the options of obtaining work values for services provided by podiatrists and optometrists either through surveys using the Hsiao methodology or by convening focus groups that included both limited license practitioners and MDs. Although the latter option was thought to be the most promising of all those considered, the Commission was unable to secure participation of all the groups essential to its success.

While each of these activities might have yielded interesting information, staff found none capable of definitively addressing the question of similarity of services. For example, comparison of the visit pattern data for podiatrists and orthopedic surgeons showed that podiatrists tend to provide more postoperative visits than orthopedic surgeons for specific foot and ankle operations. This difference in practice style, however, is not evidence that the work or clinical content of each individual visit differs. Similarly, while the mean time for a routine eye examination is comparable for both ophthalmologists and optometrists, it is unclear whether the content of such visits is comparable.

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[4] Optometrists, like ophthalmologists, use both the generic EM codes and special ophthalmology visit codes.

Evidence may be presented later that convincingly demonstrates that different practitioner groups interpret some procedure codes differently. In this case, coding changes to ensure that procedure codes do not represent heterogenous services may be a suitable option for refinement.

RECOMMENDATIONS

In reaching a decision for this report, the Commission considered whether it had sufficient information to warrant a change in current Medicare payment policy. In fact, there are at least two convincing arguments to suggest that neither optometrists nor podiatrists should be distinguished from doctors of medicine and osteopathy when billing under the same procedure code.

First, Medicare currently makes no distinction between podiatrists and optometrists and MDs in implementing payment. All are paid on the basis of customary, prevailing, and reasonable charges. Unlike the case of physician assistants, there is no provision for fractional payment.[5] Further, carriers that do not use specialty differentials often group podiatrists and optometrists with MDs. For example, some carriers group podiatrists with either surgeons or nonspecialists. Optometrists are often grouped with nonspecialists or general practitioners.

Analysis of charge data indicates that podiatrists are paid less than MDs for some procedures that both groups provide. For others, they are paid more. Average allowed charges for services provided by optometrists are generally 80 percent to 90 percent of those for similarly coded services provided by ophthalmologists.

Second, these practitioners have long been distinguished from other non-MD health professionals by inclusion in the Medicare definition of physician. This provision reflects the fact that podiatrists and optometrists are considered independent practitioners under state law for services falling within their scope of practice. Neither supervision nor collaboration with MDs is required as a condition for practice. The Commission, therefore, recommends that podiatrists and optometrists should be paid under the

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[5] For a more detailed discussion of payment to physician assistants and other health professionals not defined as physicians, see Chapter 10.

Medicare Fee Schedule, using the same relative values and conversion factors as applied to doctors of medicine and osteopathy.

The Commission has reservations, however, about the use of the term "physician" to describe health professionals who are not doctors of medicine or osteopathy. Although the Commission does not question the appropriateness of covering their services under the Medicare program, it believes that the term "limited license practitioner" more accurately reflects their more narrowly defined scope of practice.

IMPLEMENTING THE POLICY

Data are already available that could be used to assign relative values for some services podiatrists and optometrists provide. Work values for a number of services provided by podiatrists are available through the Hsiao Phase I and II surveys of orthopedic surgeons and dermatologists. Similarly, work values for most optometry services are available through the Hsiao survey of ophthalmologists. Many services provided by podiatrists, however, including those accounting for a substantial portion of their Medicare charges, were not surveyed. To ensure that estimates of time and work for these services are valid, therefore, it would be desirable to include podiatry in Phase III of the Hsiao study now under way. Further opportunities to review and refine relative values will also be afforded these groups through the participation of their professional organizations in the Commission's refinement process.

As with doctors of medicine and osteopathy, inclusion of podiatrists and optometrists under the Medicare Fee Schedule confers not only new payments but new responsibilities. The Commission is concerned about the lack of communication between organizations representing these practitioners and medical specialty societies and is hopeful that these channels can be improved. Such communication between practitioners billing for services under the same procedure code will be critical in addressing variations in practice patterns, utilization, and appropriateness. Otherwise, the promise of other key aspects of payment reform, including the development and dissemination of practice guidelines and coordinated responses to slow expenditure growth under the system of Volume Performance Standards, will be limited.

The Commission recognizes that relationships among these organizations are complicated and sensitive. The success of payment reform, however, depends in large part on the willingness of practitioners and organizations representing them to communicate and cooperate in a frank and productive manner.

CHAPTER 10

PAYING NONPHYSICIAN PRACTITIONERS UNDER THE MEDICARE FEE SCHEDULE

The Omnibus Budget Reconciliation Act of 1989 (OBRA89) mandated that the Commission conduct a study of the "implications of a resource-based fee schedule for physician services for nonphysician practitioners, such as physician assistants, clinical psychologists, nurse midwives, and other health practitioners whose services can be billed under the Medicare program on a fee-for-service basis." The legislation further specified that the Commission recommend:

- the proper level of payment for nonphysicians, and

- whether adjustments to their payments should be subject to the Volume Performance Standard (VPS) process and what update should be used for services outside this process.

The Senate Appropriations Committee also explicitly expressed its interest in the Commission studying this issue because payment reforms "may have far-reaching effects" on nonphysicians.

In carrying out its assignment, the Commission focused only on fee-for-service payment for services of nonphysician practitioners (NPPs) already compensated on a fee-for-service basis by the Medicare program, not on alternative methods for paying NPPs such as cost-based payments for services provided in rural health clinics. The Commission is concerned about expanding the circumstances under which NPPs receive fee-for-service payment, particularly in light of the higher costs to both the program and beneficiaries that accompany this approach. The Congress did, however, ask the Commission to study one issue that could involve expansion of fee-for-service coverage for NPPs: payment for assistance at surgery. This issue is covered in Chapter 12.

During the past year the Commission has reviewed the research literature on the role of and care provided by NPPs, met with organizations representing NPPs, held a hearing on NPP payment issues, and analyzed how the Medicare Fee Schedule will affect NPPs. The Commission has reviewed the current system of paying NPPs, which is characterized by practitioner and site-specific percentage differentials, and has considered alternatives that would be consistent with the principles and goals of physician payment reform. The Commission's major concern with the present system is that it reflects a set of incremental policy decisions regarding the level of payment different NPP professions should receive. The resulting payments do not reflect the relative costs of NPP services compared with physician services or the relative costs of services provided by one NPP category compared with another.

RECOMMENDATION

Nonphysician practitioners whose services are currently billed under the Medicare program on a fee-for-service basis should continue to have payments that differ from those of physicians. Current percentage differentials, however, should be replaced with differentials that reflect differences in physicians' and nonphysicians' resource costs: work, practice expense, and malpractice expense. The value of the work component should be adjusted to reflect differences in investments in education and training between each NPP category and physicians. The components for practice expense and malpractice expense should also be adjusted.

The bonus applied to payments for physician services provided in Health Professional Shortage Areas (HPSAs) should also apply at the same percentage rate to payments for NPP services provided in HPSAs.

All services provided by NPPs should be identified as such on the claims forms according to the specific NPP category. Modifiers to the existing Current Procedural Terminology (CPT) codes should be used to achieve this.

When physicians bill for evaluation and management (EM) services provided by their NPP employees, these services should be paid at the NPP level, rather than the physician level. The identification of services provided by NPPs, through the use of a modifier, will facilitate application of the correct payments.

The services of NPPs should be included in the VPS. Because of the linkage of NPP fees to those of physicians, fees for NPP services will automatically be updated through the VPS process.

This chapter describes how the Commission reached these recommendations. It begins by summarizing each NPP's education and role in providing care to Medicare beneficiaries and then discusses the implications of continuing the current payment methodology under the Medicare Fee Schedule. The rest of the chapter discusses the Commission's framework for analysis of this issue.

PROFESSIONAL CHARACTERISTICS AND ROLES IN PROVIDING CARE TO MEDICARE BENEFICIARIES

The Commission's study of NPPs focused on the following six practitioner groups: nurse practitioners (NPs), physician assistants (PAs), certified nurse midwives (CNMs), certified registered nurse anesthetists (CRNAs), clinical psychologists (CPs), and clinical social workers (CSWs). Other NPPs whose services are billed for on a fee-for-service basis are physical therapists (PTs), occupational therapists (OTs), speech therapists, and audiologists. Because the services of these practitioners tend to complement rather than serve as alternatives to physician care, the implications of the Medicare Fee Schedule for them will be discussed separately in the final section of the chapter.

Professional Characteristics

Some of the NPP professions are relatively young. The first federally funded demonstration project for NPs was developed in 1965, around the same time the first training program for PAs opened its doors to students. These two professions were born of necessity during times of perceived physician shortages and maldistribution. PAs and NPs were cast as "physician extenders" in primary care settings. During the past few decades, their roles have been influenced by changes in the supply of primary care physicians, advances in their education that have led to more expanded roles, and payment policy that opened the door to their use in areas other than primary care. In addition to providing care in primary care settings, NPPs are now found in nursing homes providing visit services, in delivery rooms conducting deliveries, and in operating rooms assisting at surgery.

Other NPP professions have long-established traditions in caregiving. CRNAs began administering anesthesia in the mid-nineteenth century and, in doing so, became the first nurse specialists (Bankert 1989). Their early role was not as physician extenders, but rather as primary providers of anesthesia. Likewise, midwives have played a key role in maternity care for centuries as primary caregivers. In the 1920s, nurse midwifery was born as a distinct nursing profession accompanied by a period of growth in educational programs. Subsequently, midwives enjoyed growing popularity and acceptance by consumers as providers of maternity care.

Six NPP professions are described below in terms of their education and role in providing health care. These brief summaries are intended to provide some context for later discussion of the implications of the Medicare Fee Schedule for NPPs and the Commission's recommendations for policy changes.

Nurse Practitioners. A nurse practitioner is a registered nurse (RN) with advanced education and clinical training in a health care specialty area.[1] The specialty areas are either age or setting-specific and include pediatric/child health, adult health, geriatric health, women's health, school health, and occupational health.[2] Nurse practitioners serve as a regular source of care for children and adults through health and illness. Their services are characterized by assessment, diagnosis, and treatment similar to other physician and nonphysician practitioners; however, they are educated according to the nursing process, not the medical model of care.

Nurse practitioners are a part of the health care team in most health care settings. Geriatric NPs practice in nursing homes and skilled nursing facilities, while most psychiatric/mental health NPs practice in private office settings (Towers 1989). The degree of collaboration between the various nurse practitioner specialists and physicians varies widely. Depending on the setting and location of practice, a physician may or may not be on-site while the nurse practitioner sees patients. For example, a recent survey of NPs revealed that 42 percent of adult NPs always have a physician on-site while only 10 percent of psychiatric NPs practice in this arrangement (Towers 1989). For those with off-site physicians, various arrangements are made for in-person or telephone consultation.

Studies have demonstrated that NPs emphasize health education, preventive health counseling, and follow-up care more than physicians. They also identify psychosocial factors more often and spend more time engaged in therapeutic listening than physicians (Bibb 1982; Prescott and Driscoll 1980). Two outcome studies have demonstrated that NPs are particularly skilled at caring for patients with chronic illnesses, such as hypertension and obesity (Ramsey and others 1982; Runyon 1975).

Nurse practitioners receive their advanced education either in certificate or master's programs. Certificate programs are at least one year long and are followed by a period of supervised clinical practice. While certificate programs do not require entering students to have baccalaureate degrees, most master's programs make this a prerequisite. Following completion of these programs, the American Nurses' Association and other national organizations offer certification by exam as an additional credential. Of the approximately 25,000 nurse practitioners in the United States, about 50 percent have master's degrees.

Physician Assistants. Physician assistants are academically and clinically prepared to provide health care under the direction and supervision of a medical doctor (MD) or doctor of osteopathy (DO). Their education consists of a training program that lasts an average of 24 months and encompasses classroom instruction and clinical training under the close supervision of a physician. Entering students are not required to have baccalaureate degrees; however, more than 50 percent have earned this degree before entering a PA program. The PA profession expanded rapidly during the last decade, increasing from 8,000 in 1980 to nearly 20,000 in 1990.

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[1] Nurse practitioners are not the same as clinical nurse specialists (CNSs). The latter are master's-prepared and have their origins in tertiary care settings as specialists (such as a cardiac clinical nurse specialist). CNSs do, however, provide primary care in some settings.

[2] About 20 percent of nurse practitioner training programs focus on geriatrics (ANA 1989).

Physician assistants are educated to function as generalists and receive education in basic medical science and a variety of clinical disciplines. In contrast to nurse practitioners, PAs are educated and practice according to the medical model and, as their name implies, assist physicians in the provision of care. The medical profession plays a significant role in shaping the PA profession. Programs are accredited by the American Medical Association (AMA), and guidelines for accreditation of programs are approved and adopted by several medical organizations, including the AMA and the American Academy of Family Physicians. All programs have a medical director.

PAs provide diagnostic, therapeutic, and preventive services in all settings where physicians practice. The PA's role is defined by the supervising physician, state laws and regulations, individual competencies, hospital rules, payment policy, and patient population (AAPA, 1990). While most PAs (61 percent) work in primary care, they also serve as assistants at surgery and complements to hospital house staff. There is a growing trend toward specialization and away from family or general internal medicine practice settings (HHS 1988).

One study of task delegation found that PAs are more likely than physicians to be assigned patients who are under 65, male, seeking help for acute problems, new patients, and walk-in (or unscheduled) patients (Crandall and others 1984). A recent study conducted at Kaiser Permanente reports that "PAs are capable of providing care for 86 percent of the diagnoses seen in the outpatient primary care setting while maintaining high patient acceptance" (Hooker and Freeborn 1989). These results confirm the findings from earlier studies that reported the potential for PA substitution for physicians at a rate of about 80 percent for adult primary care (Record 1977; Steinwachs 1976).

Certified Nurse Midwives. A certified nurse midwife is an RN with advanced training in midwifery who is certified by the American College of Nurse Midwives. Nurse midwives are educated either in non-degree programs that generally last at least one year or master's level programs lasting two years. Between 50 percent and 60 percent of CNMs hold master's degrees. About 2,600 CNMs practice in the United States today.

Nurse midwives care for women during all phases of their reproductive cycles, as well as for their newborns. They conducted an estimated 2.6 percent of all deliveries in 1987.[3] The practice of CNMs is generally confined to the care of healthy women who are expected to have normal deliveries, although survey data provide evidence of the participation of midwives in high-risk deliveries (Adams 1989).

Nurse midwives work in consultation with physicians in hospitals, private practices, family planning clinics, and birthing centers. Many CNMs are administratively independent from physicians. Their scope of practice and degree of independence are determined by state laws, hospital rules, and, in some cases, by insurers providing professional liability insurance.

Certified Registered Nurse Anesthetists. These practitioners are RNs with advanced training in the specialty of anesthesia. Training programs last a minimum of two years and require a clinical practicum at a university-based or large community hospital. Many programs require one to two years of experience in critical care or intensive care nursing. All graduates must successfully pass a national certification exam in order to practice. Master's degrees are offered through 64 percent of all training programs. Regardless of the type of program, entering students must have baccalaureate degrees, although this requirement is relatively new (1986). About 22,000 CRNAs practice in the United States today, up from some 14,000 in 1970.

Nurse anesthetists work solo, without the medical direction of an anesthesiologist, or as part of a team comprised of an anesthesiologist and two or more CRNAs. Some state laws require that CRNAs be supervised by a physician, and in many cases this may be the surgeon performing the operation. (There are no states that require supervision by an anesthesiologist.) Hospitals that rely on nurse anesthetists working without the medical direction of anesthesiologists account for about 7.5 percent of all anesthetics annually (Rosenbach and others 1988). These hospitals have fewer beds and are more rural than hospitals employing anesthesiologists or teams of anesthesiologists and CRNAs. They are also generally nonteaching hospitals.

Clinical Psychologists. Clinical psychologists are educated at the doctoral level to provide services that involve the diagnosis and treatment of psychological and cognitive disorders. Clinical psychologists earn their credentials from accredited programs in psychology that typically require six years of full-time academic study and at least one year of full-time supervised clinical experience. Clinical experience is also gained before the internship year through clinical rotations or practicums. Some 60,000 CPs practice in the United States today.

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[3] This estimate is based on survey data; the actual number of deliveries conducted by midwives may be different.

Clinical psychologists are licensed to practice independently in all states following at least a year of supervised postdoctoral clinical experience.[4] They do not require supervision or orders from physicians in order to carry out their practice.[5] Unlike psychiatrists, CPs are not licensed to prescribe medication or administer electroshock therapy. They practice privately as well as in community mental health centers, hospitals, and rehabilitation facilities.

Clinical Social Workers. Clinical social workers were recognized in the 1978 report of the President's Commission on Mental Health as one of four core practitioners of mental health services. A CSW must have a graduate degree from an accredited social work program; two years of full-time, supervised clinical experience; and either licensing where states require it, or certification by a national organization of clinical social workers. There are more than 60,000 CSWs practicing in the United States.

The nature of clinical social work is to enhance and maintain the psychological functioning of individuals, families, and small groups. Clinical social work practice is the professional application of social work theory and methods to the treatment and prevention of psychosocial dysfunction, disability or impairment, including emotional and mental disorders (NASW 1984). Clinical social workers provide services in many settings, including private practice. They collaborate with other practitioners, including psychiatrists and other physicians, for the purpose of referral.

IMPLICATIONS OF THE MEDICARE FEE SCHEDULE FOR NPPs

The Medicare program covers the services of all of the above-mentioned NPPs; however, various payment mechanisms are established for each. The variables that distinguish one NPP from another for payment purposes are whether they receive direct or indirect (to the practitioner's employer) payment, whether they are required to accept Medicare assignment, the percentage differential that is applied to physicians' fees to determine the NPP fee, and the practice sites that are conditions of payment (Table 10-1).

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[4] This year is in addition to the one year (minimum) of supervised experience before the doctoral degree is awarded.

[5] OBRA89, the legislation that expanded coverage to CPs, included language directing the Secretary of Health and Human Services to develop criteria regarding consultation with patients' attending physicians as a condition of payment to CPs. CPs are required to (1) document in the medical record the desirability of contacting the primary care physician to consider potential medical conditions that may contribute to the patient's condition, and (2) provide written notification to the primary physician that services are being provided to the patient or to contact the primary care physician directly. This second requirement is waived if the patient specifically requests that the primary care physician not be contacted or notified.

Table 10-1. Medicare Part B Payment to Nonphysician Providers

	Coverage/ Setting	Payment Made To	Payment Mechanism	Assignment
Nurse Practitioner	Services provided in nursing facilities in collaboration with physician.	Employer	Not to exceed 85% of physician prevailing charge rate	Mandatory
	Services provided in rural health clinics	Clinic	Reasonable cost or included in all inclusive rate for rural health clinic services	NA
	Services in HMOs & CMPs that have risk-sharing contracts with HCFA	HMO or CMP	Capitation	NA
	Services "incident to" physician services	Employer	CPR at physician rate	Optional
Physician Assistant	Hospital, SNF, and ICF services if such services would be covered if furnished by physician	Employer	Hospital services not to exceed 75% physician prevailing SNF, ICF not to exceed 85% physician prevailing	Mandatory
	Assistant at surgery services	Employer	65% of physician reasonable charge	Mandatory
	Office services provided "incident to" physician service	Employer	CPR at physician rate	Optional
	Rural health clinic services	Clinic	Reasonable cost or included in all inclusive rate for rural health clinic	NA
	Services provided in HMOs and CMPs that have risk-sharing contracts with HCFA	HMO or CMP	Capitation	NA
	Services to homebound patients in areas without home health agency	Employer	CPR at physician rate	Optional
	Services provided in rural HPSAs	Employer	85% of physician prevailing	Optional

Table 10-1. - Continued

	Coverage/ Setting	Payment Made To	Payment Mechanism	Assignment
Clinical Psychologist	"Qualified Psychologists" services as would otherwise be covered if provided by a physician or as "incident to" physician services.	Psychologist	Therapeutic services: 80% of participating psychiatrists' prevailing	Mandatory
	All settings covered		Diagnostic services: 90% of clinical psychologists' prevailing	Mandatory
			Fee schedule in development	
Clinical Social Worker	Services in HMOs or CMPs that have risk sharing contracts with HCFA	HMO or CMP	Capitation	NA
	Services that would otherwise be covered if provided by a physician or as "incident to" physician services	Social Worker	Lesser of the actual charge or 75% of the amount that would be paid to a psychologist	Mandatory
Certified Registered Nurse Anesthetist	Anesthesia services & related care provided under the supervision of a physician	CRNA if self-employed. If not, employer	Lesser of the . actual charge . the applicable CRNA conversion factor multiplied by the sum of allowable base and time units . the applicable participating anesthesiologists' prevailing charge conversion factor multiplied by the sum of allowable base and time units	Mandatory
			There are two state level conversion factors: a medically directed CF a non-medically directed CF	
Certified Nurse Midwife	Services provided by a CNM to the extent the service would be covered if furnished by a physician	Nurse midwife if self-employed. If not, employer	Lesser of the . actual charge . 65% of OB/GYN physician prevailing	Mandatory
	Services restricted to the maternity cycle			

Note: "Incident to" physician services are services furnished as an integral, although incidental, part of the physician's personal and professional services in the course of diagnosing or treating any injury or illness. The services must be provided under the direct supervision of a physician. The direct supervision provision is not interpreted uniformly by Medicare carriers.

Decisions concerning coverage for particular sites of care and accompanying payment levels, direct and indirect payment arrangements, and percentage differentials were made in an incremental fashion. The resulting set of payment policies contains inconsistencies that should be resolved by the Commission's recommendations for NPP payment reform.[6]

Payment rates range from 60 percent[7] of physicians' prevailing charges in the case of CSWs to 100 percent for the services of PAs and NPs incident to physician office services. These percentages represent the results of negotiations between lawmakers and professional organizations and are not based on empirical data concerning the costs of NPP services compared with physician services. Some of the differentials may have been intentional to enhance access to particular sites. (PA-provided nursing home visits, for instance, are reimbursed at 85 percent of the physician level compared with 65 percent and 75 percent for assisting at surgery and providing hospital visits.) In addition, the pattern of differentials indicates lower payments for services that have been considered overvalued, such as assistance at surgery, than for EM services.

Analysis of 1988 Part B Medicare Annual Data files (BMAD) shows that expenditures for services provided by NPPs, including physical and occupational therapists, amount to only 0.35 percent of all Part B allowed charges. This result understates the importance of NPPs, however, because claims forms that provide the basis for the BMAD files are not designed to collect data on the discrete services some NPPs provide. For example, services provided by NPs and PAs as incident to a physician's service are recorded as though they were provided by the physician. In addition, the services of CNMs and CSWs are not identified by all carriers. These and other limitations frustrate efforts to account for the services of NPPs and assess the implications payment reform could have on Medicare expenditures.

Without a change in the law, NPP payments will continue to be made for covered site/service combinations using specified percentage differentials relative to physician fees. Beginning in January 1992, however, physician payment levels will be determined by the resource-based Medicare Fee Schedule. Where physician prevailing charges now serve as a cap on the payments to some NPPs and the basis for a percentage differential to others, the Medicare Fee Schedule payments will have a similar role. OBRA89 provided some specific language on the implications of the Medicare Fee Schedule for payments to some NPPs. The same legislation, however, included a mandate for the Commission to study these implications, thus leaving the door open for recommendations that depart from the OBRA89 directives for NPP payment under the fee schedule.

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[6] For example, OBRA90 enacted a change in payment for the services of NPs who work in rural areas. Under the new provision, the services of an NP provided outside of the hospital in a rural area (defined as an area other than a metropolitan statistical area) will be reimbursed at 85 percent of the physician prevailing charge. This differs with the "incident to" provision that offers higher (100 percent) reimbursement for all NP services provided incident to a physician's service when the NP is employed by a physician in an office setting. Payments for incident to services are made to the NP's employer, while the OBRA90 provision allows for direct payment to the NP.

[7] Payments to CSWs are capped at 75 percent of the CP's rate, which is capped at 80 percent of psychiatrists' prevailing charges (.75 X .80 = .60).

Nurse Practitioners. OBRA89 amended the Social Security Act to provide that prevailing charge limitations for NPs be limited to the physician fee schedule amount, thus retaining payment under the customary, prevailing, and reasonable charge system (CPR). Under the Medicare Fee Schedule, NPs will have their prevailing charges capped at a percentage of the physician fee schedule amount rather than the physician prevailing charge amount. For example, NP payments will be capped at 85 percent of the fee schedule amount for services provided in nonrural nursing homes and 75 percent and 85 percent, respectively, for hospital services and all other services provided in rural areas. The law calls for the establishment of charge screens for NP services.[8]

To the extent that physician fees for particular services increase or decrease under the Medicare Fee Schedule, fees for NP-provided services will do the same. Nurse practitioners stand to benefit from the expected increase in payment for EM services because these services comprise the bulk of their caregiving. Through its simulation of payment under the Medicare Fee Schedule, the Commission projects that relative payments for EM services will increase by about 30 percent (see Chapter 1). Whether these expected increases are passed on to NPs in the form of increased salaries will depend upon their employment arrangements. Nurse practitioners who are employed by physicians may not realize the full measure of the increased payment for EM services if their employers choose not to pass the additional revenue on to them in the form of higher salaries.

Physician Assistants. The OBRA89 provision for payment to PAs is the same as described above for NPs. A reasonable charge method is maintained for PAs by capping their prevailing charges at a percentage of the physician fee schedule amount. As is true in the case of NPs, different percentages apply to PA payment depending upon the service/site combination.

Payments to PAs will also parallel payments to physicians under the Medicare Fee Schedule. Payments for assistance at surgery, which are expected to decrease under the fee schedule, will be lower; those for EM services will be higher. PA assistance at surgery will be paid at 65 percent of the amount paid to physicians who assist at surgery, which is

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[8] The Health Care Financing Administration (HCFA) has filed for a technical amendment to OBRA89. HCFA questions whether the Congress intended to maintain a reasonable charge method for paying NPs, rather than to simply pay 80 percent of the lesser of the actual charge or the applicable 75 or 85 percent of the physician Medicare Fee Schedule amount.

16 percent of the fee schedule payment for the surgery.[9] Payments to PAs who assist at surgery will be affected by both the fee schedule payments for surgery and the percentage of the fee schedule amount that is allowed for assisting. Commission simulations show that relative payment for surgery is expected to decrease.

Nurse Midwives. OBRA89 amended the Social Security Act to provide that nurse midwives receive no more than 65 percent of the Medicare Fee Schedule amount. Instead of being paid at 65 percent of either the obstetrician/gynecologists' prevailing charge or the nonspecialists' prevailing charge (in carrier areas where specialty differentials are currently not recognized), midwives will receive a percentage of the Medicare Fee Schedule amount.

Certified Registered Nurse Anesthetists. Nurse anesthetists are currently paid on the basis of a fee schedule that uses the Uniform Relative Value Guide (URVG), which was developed for anesthesiologists. Relative values are multiplied by one of two statewide conversion factors, depending upon whether the CRNA is medically directed (works as a member of an anesthesia care team) or nonmedically directed (works without the medical direction of an anesthesiologist). There are three payment screens: the actual charge, the CRNA fee schedule amount, and the anesthesiologists' payment based on the anesthesiologists' prevailing conversion factor. The latter screen is based on payments to anesthesiologists who participate in Medicare's Participating Physician and Supplier Program (PAR). After January 1992, the third screen will be replaced by the anesthesiologists' Medicare Fee Schedule amount.

The Omnibus Budget Reconciliation Act of 1990 specified additional payment changes for CRNAs. Beginning in January 1991 and extending through the transition to the full Medicare Fee Schedule in 1996, the nonmedically directed CRNA conversion factor will gradually increase until it is equal to the physician conversion factor. During this period, the medically directed CRNA conversion factor will be set at 70 percent of the nonmedically directed conversion factor. In essence, this places the nonmedically directed CRNA on parity with physicians and provides for a differential payment to medically directed CRNAs.[10]

Clinical Psychologists. Payment levels to CPs have never been specified in the law. Rather, legislation has directed the Secretary of Health and Human Services to set payments according to a fee schedule. Current carrier guidelines set payment at the lesser of the actual charge, or a fee schedule amount that is set at 80 percent of the participating psychiatrists' prevailing charge for therapeutic services and 90 percent of the independent psychologists' prevailing charge for diagnostic services (psychological testing). OBRA89 did not provide specific instructions regarding payment under the Medicare Fee Schedule for the services of CPs.

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[9] The Commission recommends that this 16 percent figure be returned to the pre-OBRA90 level of 20 percent until additional study of the resources involved in assistance at surgery is completed (see Chapter 12).

[10] The Commission makes additional recommendations affecting payment to CRNAs in Chapter 11.

Clinical Social Workers. Coverage for the services of CSWs was first established in OBRA89, effective July 1990. Payments are set at the lower of the actual charge or 75 percent of the payment to CPs. There were no provisions for how payments should be made under the Medicare Fee Schedule.

FRAMEWORK FOR RECOMMENDATIONS

During its deliberations on payment to NPPs, the Commission considered earlier recommendations concerning resource-based payment, concurrent decisions concerning payment to limited license practitioners (LLPs), and factors such as access to care and costs to the program and beneficiaries. The Commission was challenged to reconcile all relevant policy elements in making its recommendations. The following section summarizes the Commission's reasoning and analysis on these issues.

In its studies of payment to NPPs and LLPs, the Commission set out to examine whether information concerning their services would compel it to recommend changes in current payment policy in the context of a resource-based fee schedule. Currently, Medicare makes no distinction between LLPs and doctors of medicine or osteopathy in establishing payments.[11] Both groups of providers are paid on the basis of customary, prevailing, and reasonable charges for covered services falling within state scope of practice laws. Nonphysician providers, on the other hand, are paid reduced fees based on physician prevailing charges.

The Commission has reservations, however, concerning the continued use of the term "physician" to describe, for payment purposes, practitioners who are neither doctors of medicine nor of osteopathy. While it recommends payment at physician levels for LLPs because they fall under the Medicare definition of physician, it believes that continuation of two terms to describe nonphysicians blurs the distinction between physicians and nonphysicians.

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[11] Payments are made in accordance with Section 1861 (r) of the Social Security Act that defines the term physician as a doctor of medicine or osteopathy, a doctor of dental surgery or of dental medicine, a doctor of podiatric medicine, a doctor of optometry, or a chiropractor.

When the Commission developed its proposal for a resource-based fee schedule, it was guided by the pattern of prices expected in a hypothetical perfectly functioning market for physician services. Under this model, relative prices would reflect the relative costs of efficient providers. If services provided by different physicians were the same, payment would be the same.[12] Basing relative prices on resource costs was judged to simulate a well-functioning market for physician services and therefore provide fair payment. In turn, the Commission judged that fair payment could further the goal of beneficiary access to care, because physicians would be willing to provide necessary services. The implication for payment to NPPs is that if CPT-defined services of nonphysicians and physicians are the same, payment should be the same. If the services are different, payment should be different. Using this framework will lead to fair payments to NPPs.

In its deliberations on payment to LLPs, the Commission looked for convincing evidence that the services of these practitioners are either the same as or different from the services of doctors of medicine or osteopathy. It did not find a sound basis to recommend a change in current policy and has recommended that LLPs be paid under the Medicare Fee Schedule using the same relative values and conversion factors as applied to doctors of medicine and osteopathy (see Chapter 9).

Consistent with this approach, the Commission has looked for sound evidence to recommend a change in current payment policy for NPPs. The body of literature on NPPs and unpublished information provided by professional organizations do not produce definitive evidence that the CPT-defined services of NPPs and physicians are the same. Many studies conclude that NPPs provide high-quality care and are quite skilled in caring for patients with chronic illnesses such as hypertension and obesity (Ramsey and others 1982; Runyon 1975). An often-cited Office of Technology Assessment report concludes that the care provided by NPs, PAs, and CNMs is of equivalent quality to physician care when these NPPs are practicing within their scope of practice. But this report stops short of saying that the services are the same (OTA 1986).

Given the apparent qualitative and quantitative differences in the education of NPPs and physicians, the Commission is reluctant to assume, lacking the evidence, that the CPT-defined services provided by both professionals are the same. The difference in length of education between the typical NP, for example, and a physician is four to six years, assuming four years of undergraduate education for both. But even beyond this significant quantitative difference in their respective educations, the years in training that they have in common (the first six) are not similar. There are qualitative differences in the course content and clinical experience offered to NPPs and physicians.

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[12] In its *1989 Annual Report to Congress*, the Commission recommended that specialty differentials not be incorporated into the Medicare Fee Schedule. The Congress adopted this policy in OBRA89. This recommendation was based on evidence from Phase I of the Hsiao study that physicians in different specialties estimate the work of code-specific vignettes similarly. In addition, Hsiao's relative work values incorporate the estimates of physicians from different specialties. These facts convinced the Commission that any additional differentials, such as those based on the opportunity costs of specialty training, would double-count work effort.

The Commission has heard arguments that the services of NPPs and physicians are the same because the same billing codes are used for both physician and nonphysician provided services. This argument, however, relies on an administrative feature of the current system. Although both NPPs and physicians use CPT codes, this practice has little to do with determining if the services provided by a nonphysician and a physician are the same. Furthermore, asserting that all services are the same within any given CPT code may be risky, especially for EM codes. Individual EM codes encompass a range of services; some can be delegated to nonphysicians, and others can only be provided by physicians. For example, the full range of visits coded using CPT code 90060 (intermediate office visit with an established patient) may not be eligible for delegation to nonphysicians. Some patients whose care could be appropriately coded as 90060 may present with a set of symptoms that warrant a physician's opinion and diagnosis, while other patients can be competently cared for by NPPs. The proposed EM coding reforms will go a long way to improve current EM codes through the use of new content descriptors and a time component. Each code, which will be assigned one relative value, will still encompass a range of services; some that can be delegated to NPPs and others that cannot (see Chapter 8).

For all of these reasons, the Commission recommends maintaining the present policy of differential payments to NPPs. It also recommends that payments reflect differences in resource costs, a policy that provides a more systematic basis for payment differentials.

Recognizing NPPs as important providers of primary care services in underserved areas, the Commission's recommendations include an added incentive for NPPs to serve in HPSAs.[13] In 1988, only 16 percent of NPs were located in rural areas, down from 22 percent in 1977 (OTA 1990; U.S. Congress 1990). In 1989, 20 percent of PAs practiced in rural communities compared with 27 percent in 1981 (U.S. Congress 1990; AAPA 1990). Extending to NPPs practicing in HPSAs the physician bonus payments mandated by OBRA89 should attract and maintain more of these practitioners to both inner city and rural HPSAs. It should also improve access to care in areas currently not served or underserved by physicians. Moreover, this policy should encourage more NPP collaboration with physicians and, in turn, enhance the viability of medical practices, particularly in rural areas (HHS 1990).

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[13] There are three criteria that must be met for an area to be designated as a HPSA: (1) the area must be a "rational area" for the delivery of primary care services (county, part of a county, urban neighborhoods of at least 20,000, or portions of adjoining counties whose populations have limited access to primary care services); (2) one of the following must prevail within the area: the ratio of full-time primary care physicians is greater than 3,500 to 1 (about 29 primary care physicians per 100,000) or the ratio of full-time primary care physicians to population is between 3,000 to 1 and 3,500/1 if there is an unusually high demand for primary care services or insufficient capacity of existing primary care physicians; and (3) primary medical care in the contiguous areas are overtaxed, excessively distant, or inaccessible to the population. The Department of Health and Human Services identified 1,935 primary care HPSAs in 1989, 69 percent nonmetropolitan and 31 percent metropolitan (HHS 1989).

DIFFERENTIAL PAYMENT TO NPPs

Physician payment under a resource-based fee schedule will be based on three components, each representing a resource input for provision of a physician service. These are physician work, practice expense, and professional liability insurance (PLI) or malpractice expense. The Commission's recommendation calls for resource-based payment to NPPs, with separate adjustments for each of the three components. Furthermore, the recommended approach to setting payment involves calculations of distinct differentials for each NPP profession.

Establishing Differentials for the Physician Work Component

The physician work component should be adjusted by a factor that reflects the difference in human capital investment made by NPPs compared with physicians. NPPs tend to have shorter periods of postgraduate education, pay lower tuition costs, and do not have residency training. According to traditional human capital investment theory, which is described in Appendix C, these differences in investment should result in different earnings over time. Therefore, given data on length of training, tuition, and earnings for physicians and NPPs and an assumption about the appropriate rate of return on investments in human capital, an adjustment factor can be calculated. Because of the variation in education of different categories of NPPs, such calculations should be done separately for each group.

In addition to information about the human capital investments each group makes, the calculation will be affected by the rate of return on the investment that is used. A key decision in calculating a differential for work, therefore, is whether to set NPP rates of return at those of physicians or of other professionals who have postgraduate education. Physicians and attorneys have realized particularly high rates of return among those with postgraduate education (Willke and Marder 1987). NPP returns could be based either on those of physicians or a broader category of professionals.

Rough estimates of the factors that would be used to adjust the work component to calculate fee levels for NPPs, using PAs as an example, can be derived for both the physician and other professional rates of return. Commission estimates of the difference in incomes between PAs and family practitioners that would be expected simply because of the difference in educational investment, given the physician's rate of return, would lead to a 0.87 factor.[14] That is, if it is determined that PAs should achieve the same return to their investment as physicians, then the work component should be multiplied by 0.87 to calculate PA fees. If PAs are to realize the same rate of return as other professionals then the calculation must be based on physician incomes that are adjusted for the difference in rates of return. Willke and Marder report that physician incomes would be 19 percent lower if they earned the same rate of return realized by other professionals with postgraduate education.[15] Reducing physician incomes by 19 percent before calculating the PA/physician education differential results in a net factor of 0.75 to be applied to the work component, if PAs are to realize returns to their investment in their education that are comparable to other professionals with postgraduate education.

While this example is quite rough, it is suggestive of the magnitude of the factor that would be applied to calculate PA payment levels. If this approach is adopted for determining payment to NPPs, it will be necessary for HCFA to create a work adjustment factor for each type of NPP. These calculations are straightforward and should not pose an impediment to implementation.

Establishing Differentials for Practice Expense and Malpractice Expense

Readily available data on practice expenses provide little guidance on what, if any, differential should apply to this component. Surveys of physicians and NPPs do not provide data on relative practice costs for a specific type of service, such as an office visit. Logically, practice expense for a type of service should be roughly the same whether it is provided by an NPP or a physician. For an office visit, for example, rent, supplies, equipment, and clerical help are likely to be the same.

One of the largest components of practice expense for physicians is related to nonphysician employees, such as RNs and allied health personnel. NPPs, however, tend to spend more time than physicians with patients (Charney and Kitzman 1971; Mendenhall and others 1980; U.S. Congress 1979; Greenfield and others 1978) perhaps as a result of substituting more of their own time for the time of other health personnel, such as registered nurses. Including nonphysician labor in the practice expense component offsets the additional time NPPs may spend beyond the typical physician time reflected in the service's work component. To the extent that the practice expense component of physician relative values reflects the use of nonphysician labor, the NPP's total payment for work can be thought of as coming from both the work and practice expense components. In the absence of actual practice expense data for NPP services, the Commission concludes that the practice expense component should not be differentiated in setting NPP payments.

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[14] This calculation is based on four years of medical school and a three-year residency for the physician and two years of physician assistant training for the PA; both have four years of undergraduate education. A discount rate of 5 percent is assumed for all estimates.

[15] Estimates of this difference based on more recent data are likely to be smaller, reflecting the effect of Medicare budget cuts on physicians' rate of return.

Because NPPs face significantly lower malpractice expenses than physicians, their fees should reflect these differences. Using the ratio of average premium expenses for a particular NPP profession to the physician premium, the PLI component can be adjusted downward. For example, if the typical annual premium faced by a physician is $2,260 compared with $590 for an NPP, the resulting PLI allowance for NPPs would be 26 percent of the physician allowance.

A calculation for a hypothetical service illustrates how NPP payment would be determined using the three components of the resource-based relative value (Table 10-2). In the example, the physician payment for this service is $100; 50 percent of which is attributed to the work component, 45 percent to the practice expense component, and 5 percent to the PLI component. When the work, practice expense, and PLI components are combined to determine the total relative value of the service, the overall difference in payment for NPPs is smaller than that for work alone. In the example, the work component for the NPP is 87 percent or 75 percent of the physician work component, depending upon the basis for the calculations (physician versus postgraduate professional). Overall payment, however, is about 90 percent and 84 percent of physician payment, respectively.

Table 10-2. Illustration of Payment to NPPs

Practitioner	Work	Practice Expense	PLI	Fee
Physician	50.0	45	5	$100.00
NPP/Based on rate of return to: Physicians	43.5	45	1.30	89.80
Other Professionals	37.5	45	1.30	83.80

Note: A 5% rate of return is assumed.

NPP work values results from applying .87 and .75 respectively to the physician work value.

Payment for EM Services Provided by NPP Employees

Services provided by PAs and NPs are covered when they are billed as incident to a physician's service. This provision, which has existed since the beginning of the Medicare program, allows payment at the physician level for services provided by a nonphysician as an integral, although incidental, part of the physician's personal and professional services in the course of diagnosing or treating any injury or illness (Commerce Clearing House 1990). This provision allows a physician to bill for the services of NPPs, other professionals (such as RNs), and allied health personnel as if the service were provided by the physician.

The original intent of the provision was to pay for services *not* traditionally performed by physicians, services normally delegated by physicians, and services performed under the direct supervision of physicians (OTA 1986). As the role of NPPs has expanded, interpretation of this provision has widened to include coverage of EM services delegated to NPPs. The Commission recommends that when a physician employer bills for EM services provided by an NPP employee, that it be paid at the NPP level, not at the physician level. This would help restore the original intent of the provision.

NONPHYSICIAN PRACTITIONERS AND THE VOLUME PERFORMANCE STANDARD

The Congress enacted the VPS as a way to address the unacceptably high rates of increase in Part B expenditures. The VPS provides a collective incentive to physicians to examine their services for appropriateness and effectiveness and to eliminate those that may be unnecessary. The Commission addressed two questions related to the VPS and NPPs: whether NPP services should be included in the VPS, and whether NPP fees should be updated through the VPS process. It concluded that the answer is "yes" in both cases.

Because NPP services often complement or partially substitute for physician services, consistent policy dictates that these services be included in the performance standard. For some NPPs in some settings, such as a private physician practice, the physician has considerable control over the services provided by the NPP. In addition, since NPP payments will be linked to the Medicare Fee Schedule, it is logical to update fees for NPPs through the VPS process.

In implementing OBRA89, HCFA distinguished between Part B services that should and should not be subject to the performance standard rate of increase (*Federal Register* 1989). It reasoned that the services commonly performed by a physician or furnished in a physician's office should be held to the standard, while those failing to meet this criterion should not. The following services were included by HCFA in the performance standard rates:

- physician services;
- services and supplies furnished as incident to physician services;
- outpatient physical, occupational, and speech therapy services;
- antigens prepared by or administered under the direct supervision of a physician;
- services of physician assistants, certified registered nurse anesthetists, certified nurse midwives, psychologists, and social workers;
- diagnostic X-ray, laboratory, and other diagnostic tests;
- X-ray, radium, and radioactive isotope therapy; and
- surgical dressings, splints, casts, and other devices used for reduction of fractures and dislocations.

This list explicitly includes the services of all NPPs, except for those of NPs. Under current law, many NP services are provided incident to physician services and would be included in the VPS. The Commission recommends that covered NPP services be included in the VPS standard whether or not they are provided incident to physician services. In addition, it recommends that nursing home visits provided by an NP in collaboration with a physician and services provided by NPs in rural areas (as defined in OBRA90) be included in the VPS.

PAYMENTS TO OTHER NONPHYSICIAN PRACTITIONERS

Thus far, this chapter has addressed payment to several primary care and specialty NPPs whose services can be billed under the Medicare program on a fee-for-service basis. There are implications, however, for payment to other NPPs under the Medicare Fee Schedule. The following section addresses payments to NPPs whose services complement, rather than serve as substitutes to, physician services.

Physicians often refer patients to physical and occupational therapists, speech pathologists, and audiologists for specific services that these professionals are uniquely qualified to provide. Medicare covers the services of all of these practitioners with certain restrictions. Implementation of the Medicare Fee Schedule will have different implications for payments to each of these NPPs.

Payment to Physical and Occupational Therapists

The services of physical therapists and occupational therapists are covered under the Medicare program in three ways: as part of a cost-based payment to a rehabilitation agency, as incident to physician services when the PT or OT is employed by a physician, and as direct payment to independently practicing practitioners. Implementation of the Medicare Fee Schedule will affect the second and third arrangements.

When a physician employs a PT or OT, a formally trained PT or OT assistant, or a medical assistant, and any one of these employees provides a physical or occupational therapy service, the physician may bill for this as incident to a physician service and receive full physician payment under the current system. After the Medicare Fee Schedule is implemented, physicians will bill and receive payments for these services as determined under the national fee schedule. An independently practicing PT or OT can submit bills to Medicare and receive direct payment. However, payments are made on a reasonable charge basis using PT/OT prevailing and customary charge limits.

OBRA89 did not provide specific instructions for paying PTs and OTs under the Medicare Fee Schedule. The Commission believes certain issues should be addressed before these services are paid under the fee schedule. First, since physicians rarely perform many of these services, paying for such services on the basis of relative work values developed solely by physicians may not be accurate. Second, while there are CPT codes describing physical and occupational therapy services, numerous codes from the HCFA Common Procedure Coding System (HCPCS) and local codes are also widely used for billing. These will eventually need to be assigned relative work values (RWVs). Phase III of the Hsiao study may be the appropriate vehicle for addressing these issues.

As with other NPP services, payments for PTs and OTs should not be set at a percentage of the physician payment (a percentage of the physician work component) since physicians are not the primary providers. Rather, payments should be developed using an alternative method, such as developing a fee schedule using current charges as the initial basis for the RVS.[16]

Payments to Speech Pathologists and Audiologists

Payments to speech pathologists and audiologists are also covered and paid by the Medicare program on a fee-for-service basis. Both practitioners initiate treatment independently as well as receive referrals from physicians. Implementation of the Medicare Fee Schedule raises problems for these providers that are similar to those for PTs and OTs.

The services provided by speech pathologists and audiologists are described using CPT codes and HCPCS codes. For the former, the Commission recommends that RWVs be developed using a different process than one that relies solely on physician input, because physicians are not the principal providers of the services. For the latter, RWVs will need to be developed eventually as is the case for all HCPCS codes that do not derive from CPT codes.

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[16] In the case of PT/OT services, physicians' additional education is not relevant as it is in the provision of primary care or evaluation and management services.

Payments for Services Provided by Clinical Psychologists

In the course of its study of payment to NPPs under the Medicare Fee Schedule, the Commission considered recommending that CPs be paid on the same basis as LLPs, receiving payments that are the same as doctors of medicine and osteopathy. Arguments made in favor of this position were that CPs, unlike other NPPs, are independently licensed in all states to provide psychological services. They are not required to collaborate with, or receive orders from physicians in providing services such as psychotherapy or psychological testing. In addition, the education and training required of CPs is far more extensive than the education of other NPPs and, in some cases, LLPs.

The Commission, however, decided against this recommendation after considerable discussion and review of other Commission recommendations. The Commission's change in thinking on this issue relates to its reservations concerning continued use of the LLP category. By statute, practitioners in this category are treated like physicians for payment purposes. As described in Chapter 9, the Commission could find no evidence to support a change in the current policy of paying optometrists and podiatrists the same as doctors of medicine and osteopathy. However, the Commission feels that the LLP category blurs the distinction between physicians and nonphysicians and should not be perpetuated. In addition, the Commission believes that its recommended methodology for setting payment to NPPs can be used to set fair payments to CPs. Since CPs' investment in education and training averages between six and seven graduate level years, payments to CPs are expected to be very close to, if not the same as, psychiatrists. The Commission is pleased that these payment levels can be achieved without adding practitioners to the LLP category.

The Commission believes that RWVs for services provided primarily by CPs, such as psychological testing, should be developed in a manner that does not rely solely on RWVs developed for physician services. This is because data from the Hsiao study provide estimates of relative work from psychiatrists who, compared with CPs, rarely provide psychological testing. On the other hand, RWVs from the Hsiao study can provide the basis for payment to both groups for psychotherapy and other services that are provided extensively by CPs and psychiatrists.

The Commission once again recommends that Hsiao and his colleagues incorporate into Phase III of their study assignment of RWVs for services that are not primarily provided by physicians, such as psychological testing. One approach would be to include CPs in the process of developing RWVs for services for which they are the principal providers.[17]

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[17] Psychiatrists and CPs use different codes when billing for psychological testing under the Medicare program, with the former using CPT codes and the latter primarily using HCPCS codes. This fact will make it easier to assign relative values separately to these services, however as of this writing there are no plans for this work. While the CPT codes for psychological testing can be assigned work values using data from the Hsiao study, a method will need to be developed for assigning values to HCPCS codes.

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CHAPTER 11

ANESTHESIA PAYMENT ISSUES: USE OF TIME UNITS AND PAYMENT TO THE ANESTHESIA CARE TEAM

During the past year the Commission has studied two issues related to payment for anesthesia services: use of anesthesia time units and payment to the anesthesia care team. The first issue was studied in preparation for linking anesthesia payments based on the Uniform Relative Value Guide (URVG) with the Medicare Fee Schedule, while the issue of payment to the anesthesia care team grew out of the Commission's work on payment to nonphysician practitioners (NPPs). This chapter addresses both of these issues, describing the Commission's framework for analysis and rationale for its recommendations.

Anesthesia services have been paid traditionally on the basis of relative value systems that include both base and actual time units. Base units, representing the complexity, risk, and skill needed to perform the service, will be incorporated into the Medicare Fee Schedule. The Omnibus Budget Reconciliation Act of 1989 (OBRA89) directs the Secretary of Health and Human Services to use, to the extent practical, the current relative value guide in the Medicare Fee Schedule. The Health Care Financing Administration (HCFA), however, has announced its intention to eliminate the use of actual time units under the Medicare Fee Schedule.

RECOMMENDATION

Medicare should continue to pay for anesthesia services on the basis of base units and actual time. It should develop a more rigorous definition of anesthesia time and implement procedures to validate the time of anesthesia services. The hospital or surgical center should be responsible for verifying anesthesia times.

As part of its study of the implications of the Medicare Fee Schedule on NPPs, the Commission examined payment policy for certified registered nurse anesthetists (CRNAs) working as solo practitioners and as members of anesthesia care teams. Recommendations concerning payment to CRNAs who work without the supervision of an anesthesiologist (called nonmedically directed for Medicare payment purposes) are addressed in Chapter

10. This chapter focuses on the method by which the Medicare program pays for the services of an anesthesia care team comprised of an anesthesiologist and a CRNA. In addition, a recommendation concerning payment to anesthesia practitioners who supervise residents and CRNAs is made.

A simulation of current payment policy for the anesthesia care team demonstrates that the program pays more per case for the services of an anesthesia care team than it pays for either the CRNA or anesthesiologist working alone. The policy changes raising payments to CRNAs that were made in OBRA90 will further increase this difference in per case payments during the phase-in period scheduled to conclude in 1996.

RECOMMENDATIONS

The total fee paid for the services provided by an anesthesia care team consisting of an anesthesiologist and a CRNA should not exceed the payment made to a solo anesthesiologist for the same service. This recommendation is contingent upon revision of the conversion factor for medically directed CRNA services that was established by OBRA90. The total payment for the anesthesia care team must be allocated between the anesthesiologist and the CRNA in a manner that provides adequate incentives for both professionals to practice in teams.

Anesthesiologists who supervise two residents, or one resident and one CRNA, should be paid on the same basis as when they supervise two CRNAs.

ANESTHESIA TIME UNITS

Currently, the relative value of an anesthesia service is determined using both base units and fractional time units. Fractional time units are based on the actual time of the anesthesia service. HCFA has announced plans to eliminate the use of actual time in the calculation of payments for anesthesia services. It is considering using the median time for the anesthesia code instead. The Commission considered two alternatives to continuing current policy:

- paying for anesthesia services on the basis of median time, and
- paying for anesthesia services on the basis of the sum of actual surgical time and median pre- and postoperative time.

Payment for Anesthesia Services

While anesthesia services have traditionally been paid on the basis of base and time units multiplied by local conversion factors, several changes have occurred in the last few years. Before March 1989, carriers paid for anesthesia services on the basis of relative value units that were published in several different relative value guides. About two-thirds of the carriers also used units that reflected the physical status of individual patients. Three carriers used 248 anesthesia codes from the *Current Procedural Terminology* (CPT) manual for billing, while the rest used about 4,200 CPT surgery codes with anesthesia modifiers.

OBRA87 directed HCFA to adopt a single relative value guide for all anesthesia services provided after March 1, 1989. HCFA directed the carriers to use the 1988 edition of the American Society of Anesthesiologists' *Relative Value Guide* and CPT anesthesia codes. HCFA also directed the carriers to discontinue using modifiers for the physical status of the individual patient in calculating the payment. HCFA suggested that their use was subjective and difficult to validate in the claims review process. Moreover, HCFA stated that "differences in the mix of patients undergoing surgery are already largely accounted for by differences in base and time units" (*Federal Register* 1989).

The use of actual time has been justified because the anesthesia time for a surgical service varies widely due to differences in surgical time and is largely outside the control of the anesthesiologist or CRNA. Actual anesthesia time extends from when the anesthesiologist or CRNA prepares the patient for induction (administration) of anesthesia to when the patient is placed under postoperative supervision of others.

Actual time is converted into time units. Before 1990, one time unit represented every 15-minute period or fraction thereof. By rounding-up, Medicare paid for whole time units. Thus, a 65-minute anesthesia service personally performed by the anesthesiologist would have five total time units. The Health and Human Services Inspector General criticized the policy of rounding-up fractional time units (HHS 1989). In place of rounding-up to whole time units, the Commission supported the use of actual time and the calculation of fractional time units as part of its budget advice to the Congress in 1989. OBRA89 requires the use of actual time to determine fractional time units.

With the OBRA89 provision, the time units now used are fractional units based on actual time as a proportion of 15- or 30-minute periods, as appropriate. One time unit is allowed for each 15-minute time period when an anesthesiologist personally performs the service or when a CRNA performs the service. When an anesthesiologist medically directs a CRNA, one time unit represents a 30-minute time period Currently, for example, a 65-minute anesthesia service personally performed by the anesthesiologist has 4.3 total time units, while a 65-minute service supervised by the anesthesiologist has 2.2 total time units.

Problems with Time Units

HCFA has indicated that it plans to eliminate actual time as a basis for payment (*Federal Register* 1989 and 1990). The agency is concerned that start and end times for anesthesia services are difficult to determine and that payment for actual time is inconsistent with the way Medicare pays other physicians. In the Model Fee Schedule, HCFA argued that it would be easier to integrate anesthesia into the Medicare Fee Schedule by eliminating the use of actual time (HHS 1990).

In OBRA87, the Congress requested that the General Accounting Office (GAO) examine the validity of anesthesia time and make recommendations on the use of anesthesia time in Medicare payments. GAO audited medical and billing records for 1,648 Medicare cases in 11 hospitals in nine states for that study (GAO 1991).

GAO audits found wide variation in anesthesia time for specific services (Table 11-1). For example, 25 percent of the gallbladder operations took 88 or fewer minutes, while another 25 percent took 170 or more minutes. Variations in the components of total time and preoperative, postoperative, and surgical time are also wide (Table 11-2).

GAO reported that some of the variation can be explained. It found a strong correlation between surgery and anesthesia times. Total time increased when the anesthesia service was begun outside the operating room and when a resident was involved. GAO could not identify a clear justification for wide variations in preoperative time, however.

Nevertheless, there may be explanations for the preoperative variations.[1] The patient's condition, the involvement of residents, the use of invasive monitoring devices, and delays in the availability of the operating room may explain some of the variation.

Additionally, anesthesia time on claims and medical records differed for about 13 percent of the claims. The mistakes on 6 percent of the claims resulted in underpayment, while those on 7 percent resulted in overpayment. GAO concluded that these errors were caused by carelessness or errors in estimates. Nevertheless, there is no way to independently verify total anesthesia time with other records.

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[1] The American Society of Anesthesiologists contends that the GAO definition of surgical time may explain some of the variation in preoperative time. While GAO uses incision to closure time, total surgical time includes the preparation of the patient for surgery. Under the GAO study, surgical preparation time is included in perioperative anesthesia time. Differences in the percentages of total time that is surgical time from the GAO and the Battelle Medical Technology and Policy Center (Revicki 1990) studies indicate that this may be a problem (Stephenson 1991).

Table 11-1. **Anesthesia Time Variations for 1,648 Cases (1987)**

	Anesthesia Time (minutes)		
Procedure	25th Percentile	Median	75th Percentile
Cataract	65	80	100
Colon	130	170	240
Femur fracture	105	135	179
Gallbladder	88	120	170
Heart bypass	230	305	379
Hernia	75	90	125
Hip replacement	150	180	240
Prostate	65	90	120

Source: General Accounting Office, 1991.

Table 11-2. **25th and 75th Percentiles of Anesthesia Component Times for 1,648 Cases (1987)**

	25th and 75th Percentile of Anesthesia Components Time (minutes)		
Surgical Procedure	Preoperative	Surgery	Postoperative
Cataract	24-40	27-58	3-10
Colon	22-45	90-170	10-20
Femur Fracture	40-65	50-99	10-20
Gallbladder	20-41	52-115	5-22
Heart bypass	40-80	165-265	15-30
Hernia	18-30	45-81	5-15
Hip replacement	40-65	98-157	7-19
Prostate	20-40	31-65	5-15

Source: General Accounting Office, 1991.

Time Unit Options

The Commission considered continuation of current policy and two alternative ways to pay for anesthesia time: pay for median time for each anesthesia service and pay for actual time for the surgical portion of the service and median time for the pre- and postoperative periods.

Median Time. The use of median time would be simpler to administer and would eliminate the problems created by unclear definitions of the beginning and ending times for anesthesia services. The adoption of this option would eliminate the need to validate anesthesia time in the claims process.

This option has several disadvantages, however. While the calculation of median time for each anesthesia code would be relatively simple, some would argue that it is unfair to use this for payment; it is uncontrollable by the anesthesiologist or CRNA, and surgical time varies widely. GAO (1991) and the Battelle Medical Technology and Policy Center (Revicki 1990) separately have documented that anesthesia and surgical times are highly correlated. The variation in surgical time encompassed in a given code used to bill for anesthesia services may be further increased because of the heterogeneity of surgical services that are represented by each anesthesia code.[2] For example, anesthesia code 00790 is used for two splenectomy codes, one repair of diaphragm code, 99 digestive system surgery codes, and two nerve surgery codes.

This significant departure from current practice is proposed because of the difficulty in validating anesthesia time. Nevertheless, surgical time, which constitutes most of total anesthesia time, can be easily verified by operating room records. Finally, this option may systematically reduce payments to some categories of anesthesiologists or CRNAs, such as those working in teaching hospitals and smaller rural hospitals, because surgeries appear to take longer in these settings.

Actual Surgical Time and Median Pre- and Postoperative Time. A second option the Commission explored would pay for actual time for the surgical period and median time for the pre- and postoperative periods. It would pay on the basis of actual time for only that portion of the service that is not under the control of anesthesiologists or CRNAs. This would eliminate the need to validate pre- and postoperative time, while surgical time could be verified by the examination of operating room records.

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[2] There are 248 anesthesia codes, which represent approximately 4,200 different surgical services. If Medicare returned to the use of surgical codes with anesthesia modifiers for the coding of anesthesia services, average time could be calculated for individual surgical services from the Part B Medicare Annual Data file. The abandonment of anesthesia codes, however, would eliminate their advantages which include simplification of the payment system and immediate assignment of relative values to most new surgical procedures.

This option has many of the disadvantages of the previous option. The use of median time for the pre- and postoperative periods may produce systematic underpayment for preoperative time in some settings, such as teaching hospitals. Since anesthesia codes contain many surgical services, a single code may have a wide range of appropriate pre- and postoperative times.

Additionally, there are no adequate data to implement this option. The GAO report (1991) provides pre- and postoperative times for only eight surgical services from 11 hospitals. HCFA would have to conduct a study of pre- and postoperative time from anesthesia claims and their matching operating room logs for a wide variety of services in order to develop the data to support this option.

The amount of work needed to implement this option appears to be out of proportion to the benefit of eliminating the need to validate pre- and postoperative anesthesia time. If HCFA or GAO were able to complete the work necessary to implement this option, it might be attractive because it would recognize that surgical time is largely not under the control of the anesthesiologist or CRNA and would eliminate variations in payments for pre- and postoperative time.

The best option appears to be the continuation of the current policy of paying for anesthesia services on the basis of actual time. The development of a better operational definition of anesthesia time and vigorous auditing of claims would improve the current policy, nevertheless.[3] For example, the definition of anesthesia time could contain the following: anesthesia time includes only the continuous actual presence of the anesthesiologist (or if care is provided by an anesthesia care team, the medically directed CRNA) or the nonmedically directed CRNA. Alternatively, anesthesia time could be started from the time the intravenous injection is placed. The circulating nurse could record anesthesia time to provide independent validation.

THE ANESTHESIA CARE TEAM

There are three approaches to the delivery of anesthesia care: an anesthesiologist working alone, a CRNA working alone, and a team consisting of an anesthesiologist and a CRNA working together. The following section describes anesthesia professionals, their education and training, and how they work as solo practitioners and as members of an anesthesia care team.[4] The remainder of the chapter describes payment to anesthesia practitioners who work in the anesthesia care team and recommendations for change in payment policy.

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[3] In the future, the use of automated recording devices that track vital signs of the patient and time during anesthesia would provide a way of validating most of surgical, pre- and postoperative time.

Certified Registered Nurse Anesthetists

CRNAs are registered nurses with advanced education and training in the specialty of anesthesia. Educational programs are from two to three years long and require a clinical practicum at a university-based or large teaching hospital. Entering students must have a baccalaureate degree and one to two years of clinical experience in acute care, preferably in a critical care setting. Because the baccalaureate requirement is relatively new (1986), many practicing CRNAs obtained their basic nursing education in either diploma nursing programs or associate degree programs.

Of the 80 nurse anesthetist programs, 64 percent are university-based and offer master's degrees. About 20 percent of practicing CRNAs hold master's degrees. The remaining 80 percent received their education at hospital-based, certificate programs that may or may not have been affiliated with a college or university. Graduates of both types of CRNA programs must successfully pass a national certification exam in order to practice. In summary, today's CRNAs have spent from four to seven years preparing for practice, depending on the type of basic nursing and CRNA program selected.

Trends in the Supply of CRNAs. There are about 22,000 CRNAs and 19,000 anesthesiologists in the United States, or 1.2 CRNAs for every anesthesiologist. Twenty years ago, there were two CRNAs to one anesthesiologist. This changing ratio is attributed to the closure of CRNA educational programs and increases in the number of anesthesia residency positions. The program closures began in the late 1970s when higher accreditation standards were adopted, forcing some smaller schools to close. They continued in the 1980s as programs faced diminished access to clinical training due to the increased number of anesthesia residency positions (HHS 1990).[5] Close to half of the programs that were open in 1983 have since closed (National Commission 1990).

Despite program closings, there was a reversal in the steady decline of new graduates in 1988 due to growth in the number of students enrolled per program. The move toward master's level education has contributed to this trend because university programs are structured to have centralized classroom instruction and multiple clinical sites, whereas hospital-based programs usually have just one site for both classroom and clinical instruction (HHS 1990).

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[4] Other anesthesia providers include anesthesiologist assistants (AAs) and anesthesia technicians. Both provide technical support only under the direction of an anesthesiologist. AAs participate in preoperative preparation and carry out respiratory and monitoring functions. Currently, there are 300 to 350 AAs practicing in 13 states (principally Georgia and Ohio). Anesthesia technicians and technologists assist anesthesiologists in the preoperative and intraoperative phases. They are principally located in the Western states.

[5] There was a net loss of 33 programs between 1976 and 1980, and 77 between 1980 and 1988.

At the request of the Congress, the National Center for Nursing Research, a center within the National Institutes of Health, completed a study in 1990 on nurse anesthetist manpower needs.[6] This study, which investigated the supply of and projected need for CRNAs over the next 10 to 20 years, was based on several key assumptions. The researchers, like others who attempt to quantify shortages of practitioners who are close substitutes for other practitioners, developed baseline assumptions concerning the unique roles of both kinds of practitioners, their relative supply, and the requirements for their services. The study concluded that there is currently a shortage of about 5,300 CRNAs in the United States and that this will grow to 6,600 by 1992 (HHS, 1990).

The findings are based on a forecast of CRNA supply that assumes a constant number of new graduates per year through 2010, success rates for the national certifying exam that will continue in accordance with success rates in recent years, and rates of employment that are consistent with current rates. In addition, the requirements projections considered today's shifts in the relative supply of CRNAs and anesthesiologists and predicted how these shifts will affect the delivery system. The study concluded that the percentage of anesthetics delivered by solo anesthesiologists will increase from 29 percent to 40 percent by 2010 if current manpower trends continue. The researchers' conclusions were heavily dependent on predictions concerning the volume and duration of operations across all sites, the percentage of operations that require an anesthetist (anesthesiologist or CRNA), and productivity trends.[7]

Understanding the implications of this alleged CRNA shortage is difficult without knowing the extent to which patients are encountering problems in gaining access to anesthesia care. A more useful study, in the case of anesthesia care, would examine the available pool of all anesthesia providers and determine if the demand for their services was being met.

Anesthesiologists

Candidates for anesthesia residency programs must complete four years of undergraduate education and four years of medical school. The residency, a minimum of four years, consists of one year of patient care in internal medicine, surgery, or pediatrics; two years of clinical anesthesiology; and one year of concentrated clinical study in a subspecialty area like critical care or obstetrics.

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[6] The Appropriations Committee of the U.S. House of Representatives requested this study. The project was awarded to Health Economics Research (HER) by the National Center for Nursing Research.

[7] Predictions regarding the number of operations are the driving force of the requirements projections. The researchers based their predictions on trends developed from data available in the post-implementation period of the prospective payment system. One trend of particular note is a sharp increase in the number of surgeries performed in ambulatory surgical centers.

Trends in the Supply of Anesthesiologists. The American Society of Anesthesiologists reports that the specialty grew 31 percent between 1980 and 1986, more than any other specialty (ASA 1990). This rapid growth is due to numerous factors, including expansion of residency positions following the 1980 projection by the Graduate Medical Education Advisory Committee (GMENAC) that anesthesiology would be an undersupplied specialty by 1990.[8] There are now about 4,500 anesthesia residency positions available, compared with some 2,500 in 1980. Other factors that have encouraged growth of the specialty are the relatively high incomes earned by anesthesiologists and recent diversification to include subspecialties of critical care medicine and pain management. In 1988, the average net income after expenses and before taxes for anesthesiologists was $194,500, second only to surgeons (AMA 1989).

Although they are no longer considered to be in short supply, anesthesiologists are not distributed evenly across the United States but are concentrated in the Northeast, mid-Atlantic states, and the West. While the mean number of anesthesiologists per 100,000 is 8.5, the range varies from 3.4 to 6.6 per 100,000 in rural states like Idaho, North and South Dakota, and Alaska to 10.7 to 14.5 per 100,000 in Massachusetts, Pennsylvania, New York, Arizona, and Maryland (ASA 1990).

The Anesthesia Delivery System

The existence of three approaches to anesthesia care resulted from the evolution of the role of the two principal anesthetists, MDs and CRNAs, and the perpetuation of regional or institutional preferences for one type of provider. Nurses were the principal anesthesia caregivers during the late nineteenth and early twentieth centuries, stepping in to assume this role at the request of surgeons. The advent of training programs in the medical specialty of anesthesia in the 1930s brought about growth in the number of anesthesiologists that has continued unabated. The two providers presently work as a team, each with a role in the administration of anesthesia, or as solo practitioners.

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[8] Anesthesiology was one of six specialties that GMENAC projected to be in short supply. As in any effort to project manpower needs, the GMENAC panel had to make several key assumptions regarding the involvement of anesthesiologists in providing care (percentage practicing as a member of a team and percentage practicing solo) and future supply of CRNAs. The projected shortage of anesthesiologists could have been dealt with in ways other than major expansion of residency programs. GMENAC findings could have influenced policymakers to create incentives for the efficient use of CRNAs.

Solo Versus Team Approach. Care provided by both anesthesia practitioners working either solo or in teams can be found in all states. Some states require that CRNAs be supervised or directed by a physician; however, none require supervision by an anesthesiologist. Because CRNA practice is relatively unrestricted, the tradition of having these practitioners work without supervision by an anesthesiologist as so-called nonmedically directed CRNAs has continued.

Data on the percentage of all anesthetics provided by nonmedically directed CRNAs are difficult to obtain. A 1981 special supplement to the American Hospital Association's (AHA) Annual Survey revealed that hospitals that relied on nonmedically directed CRNAs for anesthesia care accounted for about 7.5 percent of surgeries, but 34 percent of all hospitals (Rosenbach and others 1988). The American Association of Nurse Anesthetists estimates that nonmedically directed CRNAs provide about 25 percent of CRNA-provided anesthesia (AANA 1990a). Nonmedically directed CRNAs generally practice in small, rural, nonteaching hospitals that have, on average, fewer than 100 beds, occupancy rates of about 50 percent, and fewer than four operations per day.[9] In terms of hospital ownership, nonmedically directed CRNAs practice more often in public or investor-owned hospitals than do teams of CRNAs and anesthesiologists or solo anesthesiologists (Rosenbach and others 1988).

Anesthesiologists and CRNAs working as a team provide most of the anesthesia in the United States, accounting for about two-thirds of all operations in 45 percent of hospitals (Rosenbach and others 1988).[10] The role that practitioners assume under this model is, of course, different from when they practice solo. Anesthesiologists are provided with clear directives regarding their supervisory role in the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA). The law specifies the services that must be performed by supervising anesthesiologists receiving payment from Medicare Part B. These are prescribing the anesthesia plan, personally participating in the most demanding aspects of the procedure (induction and emergence), remaining physically available throughout the procedure, following the course of anesthesia at frequent intervals, providing indicated postanesthesia care, and refraining from personally providing anesthesia at the same time. The team arrangement results in one anesthesiologist supervising under TEFRA requirements then, up to four CRNAs, who are in attendance throughout the surgery.

Patterns Observed in the Approach to Anesthesia Care. Recent research has shown that the relative availability of the two professionals is a strong predictor of the use of anesthesia care teams compared with provision of care by solo anesthesiologists

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[9] Data for this research are from a 1981 American Hospital Association Special Survey of Hospitals conducted for the American Society of Anesthesiologists. Unfortunately, more recent data are not available.

[10] This estimate is based on data from the same 1981 supplement to the AHA Annual Survey and may over- or underestimate the true picture.

(Rosenbach and Cromwell 1989). Sharp regional differences observed in the distribution of CRNAs and anesthesiologists allowed this type of study. Where the availability of CRNAs is above the national median and the availability of anesthesiologists is below the national median, greater use of solo CRNAs and anesthesia care teams has been observed. Where the reverse is true, more solo practice by anesthesiologists exists.

States having greater than the median number of anesthesiologists tend to be those in the East with large urban areas, such as New York, Massachusetts, Pennsylvania, and Maryland. Metropolitan areas may attract anesthesiologists because they are centers of learning and culture, thus perpetuating the patterns described above. The relative scarcity of CRNAs in areas with numerous anesthesiologists may reflect the lack of demand for CRNAs. Therefore, drawing conclusions concerning the geographic patterns of anesthesiologists and CRNAs is difficult because it is unclear if the distributions lead to, or result from, the availability of different practitioners.

The degree to which the team approach is favored over solo physician care was the subject of a study that controlled for the relative availability of CRNAs and anesthesiologists in two regions, New England and Pacific. Use of the team approach to anesthesia care persisted at a much higher level in the New England region (86 percent of all cases) than in the Pacific region (38 percent). This finding indicates that provider preferences favoring one approach over the other play a role in explaining differences across the country (Rosenbach and Cromwell 1989). In some states, solo CRNAs are the dominant providers of anesthesia; in others, solo anesthesiologists provide most anesthesia; in yet others, solo and team approaches are equally employed.

Furthermore, research has shown that use of the care team varies sharply according to geographic location, independent of variations in case mix or hospital characteristics (Rosenbach and Cromwell 1989). These patterns are of interest to the Medicare program because, as is demonstrated below, per case payments vary according to the practitioner mix involved in a case.

The research described above suggests that once a decision regarding the approach to anesthesia delivery is made at the hospital level, little sorting occurs on a case-by-case basis. In other words, cases are not triaged individually to determine if the continuous care of an anesthesiologist is needed versus the care of a supervisory anesthesiologist and a CRNA. Rather, the choice of one approach over the other is made at a more "macro" level, reflecting the relative availability of the two types of anesthesia practitioners, the philosophy of an institution or group of practitioners, or a combination of these factors. For example, a hospital may decide to provide all anesthesia using anesthesia care teams in response to the local market for the services of CRNAs and anesthesiologists or the preference of practitioners (surgeons or anesthesiologists) for one approach over the other.

Current Payment Mechanisms for Anesthesiologists and CRNAs

Payment policy for anesthesia care was developed over several years with changes of varying magnitude occurring in almost every recent legislative cycle (Table 11-3). Changes in anesthesia payment policy affected Medicare Parts A and B and instituted the first resource-based physician fee schedule used by the Medicare program. The following sections describe payment methods that are used to pay solo anesthesiologists, nonmedically directed CRNAs, and practitioners working in anesthesia care teams. These are preceded by a brief summary of recent policy changes affecting CRNAs and payment to rural hospitals for anesthesia services.

Recent Change in CRNA Payment Policy. Before January 1989, CRNAs were paid under a Part A cost pass-through when employed by a hospital, or included in an anesthesiologist's Part B payment if physician-employed. Since January 1989, when they became eligible for direct payment under Medicare Part B (OBRA86), CRNAs have been able to bill for their services and receive payment directly or sign over their billing rights to their employer. Medicare assignment is mandatory for CRNA services.

Rural Hospital Cost-Based Payment. Payment for the services of CRNAs working in a rural hospital are usually paid to the hospital under Part A on a cost basis. CRNAs sign over their Part B billing rights to the employing hospital. A rural hospital may receive cost-based payment if it meets the following criteria:

- during the previous calendar year the hospital performed fewer than 500 surgeries requiring anesthesia services of an anesthesiologist, a CRNA, an anesthesia assistant, or an intern or resident; and

- the hospital employed or contracted with one or fewer full-time equivalent CRNAs as of January 1 of the year for which cost-based payment is sought.

Payment to Anesthesiologists Working Alone. When an anesthesiologist works alone, the payment is calculated by summing the base and time units (calculated in 15 minute intervals) and multiplying them by the anesthesiologists' conversion factor. Under the customary, prevailing, and reasonable charge method, payment is the lowest of the actual charge, the customary charge conversion factor multiplied by base and time units, or the prevailing charge conversion factor multiplied by base and time units. After January 1992, anesthesiologists will be paid according to the URVG, a national conversion factor, and a geographic adjustment factor (GAF). Anesthesiologists are held to the same Medicare assignment policy as other physicians. They are also eligible, like other physicians, to receive 10 percent bonus payments for services that are provided in designated Health Professional Shortage Areas (HPSAs).

Table 11-3. History of Congressional and Regulatory Initiatives Related to Payment to Anesthesiologists and CRNAs

Deficit Reduction Act of 1984

- Removed the cost of services furnished by CRNAs from the Part A DRG payment and allowed hospitals to "pass through" the reasonable cost of CRNA services under Part A of Medicare.

- Mandated study of payment options for nonphysician anesthetists that would not discourage the use of CRNAs by hospitals.

Federal Register -- October 7, 1986

- Reduced reasonable charges for anesthesia furnished during cataract surgery and iridectomies by allowing no more than four base units.

- Limited to four the number of concurrent procedures that will be paid to supervising anesthesiologists under Part B.

Omnibus Budget Reconciliation Act of 1986

- Provided for direct payment of CRNAs on or after January 1, 1989.

- Ratified the *Federal Register* regulation (October 7, 1986) which established reasonable charge payment limits for anesthesia services furnished during cataract surgery and iridectomies.

Omnibus Budget Reconciliation Act of 1987

- Reduced the base units for concurrent supervision of CRNAs by 10 percent for two concurrent procedures; 25 percent for three; and 40 percent for four procedures.

- Required the development of a uniform, national relative value guide for anesthesia services to be used as of January 1, 1989.

- Mandated three reports to Congress:

  - geographic variation in prevailing conversion factors (HCFA; due January 1, 1989);
  - appropriateness of anesthesia times and need for payment adjustments for CRNA supervision (GAO; due January 1, 1989); and
  - determination of whether current payments for CRNA supervision are excessive (GAO; due April 1, 1990).

Federal Register -- January 26, 1989

- Proposed rule to implement uniform relative value guide; also proposed the elimination of time and modifier units.

- Proposed rule to implement the CRNA Fee Schedule.

Omnibus Budget Reconciliation Act of 1990

- Revised payment to CRNAs over a six-year period beginning in 1991. By 1996, when the phase-in of the Medicare Fee Schedule is complete, payment to nonmedically directed CRNAs will be at the physician level. Payment to medically directed CRNAs was set at 70 percent of the nonmedically directed CRNA rate.

- Continued the OBRA87 provision to reduce base units for supervision of CRNAs by 10, 25, and 40 percent for two, three, and four concurrent procedures.

Payment to CRNAs Working Alone. Payment for nonmedically directed CRNAs is calculated similarly to that for an anesthesiologist working alone. Base and time units are totaled in the same way for both providers. The conversion factor, however, is different in most cases. CRNAs have two statewide conversion factors: one for nonmedically directed CRNAs and one for medically directed CRNAs. The regulations implementing the CRNA fee schedule require that the nonmedically directed CRNA conversion factors be capped at the prevailing anesthesiologist conversion factor in each state. Nationally, the nonmedically directed CRNA conversion factors are about three-fourths of the rate for anesthesiologists, ranging from about one-half the level of anesthesiologists (in Nevada and Hawaii) to equal to the anesthesiologist level (in Alabama, Rhode Island, and Wyoming).

OBRA90 contained some important changes in payment policy for CRNAs. The conversion factor for nonmedically directed CRNAs will gradually increase until 1996, when it will equal the expected conversion factor for anesthesiologists ($16.75). Conversion factors for both CRNAs and anesthesiologists are subject to the GAF.

Payment to the Anesthesia Care Team. When an anesthesiologist and a CRNA work together in a team, total payment is comprised of payment to the CRNA (or CRNA's employer) and payment to the anesthesiologist. The CRNA is paid using the same base and time unit calculations that would be used if he or she were working alone, but these are multiplied by a lower conversion factor that is specific for medically directed CRNAs. Beginning this year, this conversion factor is set to approximate 70 percent of the conversion factor paid to nonmedically directed CRNAs. By 1996, absent any change in the law, the medically directed CRNA conversion factor will be 70 percent of both the nonmedically directed CRNAs' and anesthesiologists' conversion factor.[11]

Payment to supervising anesthesiologists is the same as it would be if they provided the service alone, but with two important adjustments. First, the base units are reduced 10 percent, 25 percent, or 40 percent for concurrent direction of two, three, or four cases to reflect the reduced level of service per case. (Current Part B payment regulations restrict anesthesiologist supervision of CRNAs to no more than four concurrent procedures). Second, time units are calculated on the basis of 30-minute intervals (rather than 15-minute intervals).[12] Anesthesiologists' conversion factors are unaffected by the practice arrangement.

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[11] According to the American Academy of Nurse Anesthetists, the medically directed CRNA conversion factor was set at 70 percent of the nonmedically directed CRNA conversion factor to approximate the differences in work per unit of service and increases in productivity that are associated with team care.

[12] A 90-minute case would be credited with six 15-minute time units if care is provided by an anesthesiologist. If an anesthesiologist supervises a CRNA, the case would be credited with three 30-minute time units.

Payment for Teaching Involvement. In some settings, anesthesiologists supervise residents and student nurse anesthetists in addition to CRNAs. Some CRNAs also supervise student nurse anesthetists. Anesthesiologists can be paid for supervising up to two residents concurrently without any reduction in payment.[13] When an anesthesiologist supervises a combination of up to two residents or CRNAs, base units for concurrent procedures are subject to the 10 percent reduction rule, and 30-minute time units are used.[14] Medicare law does not address payment policy for supervision of student nurse anesthetists. The absence of policy on this matter and the presence of clear directives for payment to anesthesiologists who supervise residents has led carriers to deny payment to supervising CRNAs and anesthesiologists beyond payment for one procedure (AANA 1990b).[15]

Payment Levels for Anesthesia Care Under Different Practice Arrangements

To demonstrate how the policies detailed above translate into payment to CRNAs and anesthesiologists, a simulation was prepared for a single procedure, an inguinal hernia repair (Table 11-4). The simulation compares 1991 and 1996 payment levels under current law.

Under current law, per case payment is higher when the anesthesia care team provides care, compared with instances when care is provided by a solo anesthesiologist or a nonmedically directed CRNA. This effect will be more pronounced by 1996, when OBRA90 changes for payment to CRNAs are fully phased in. The discussion below focuses on comparisons of payment to solo anesthesiologists and the anesthesia care team.

Payment Per Case. In 1991, Medicare pays $190.00 per case when an anesthesiologist works alone. When an anesthesiologist supervises two CRNAs concurrently, Medicare pays $230.40 per case, or 21 percent more than the solo anesthesiologist's payment. By 1996, payment per case for a 1:2 team will be 36 percent higher than the solo rate (Table 11-4, Column 3).

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[13] The Health Care Financing Administration reports that interpretation of payment for supervisory anesthesiologists varies by carrier area. Some carriers pay full base and time units for the supervision of up to two residents, while others use 30-minute rather than 15-minute time units.

[14] The OBRA87 amendments enacting the 10 percent, 25 percent, and 40 percent base unit reductions for supervision of two, three, and four concurrent operations uses the term "nurse anesthetist," leaving room for interpretation. The reductions have been applied to physician supervision of student nurse anesthetists, as well as CRNAs and AAs.

[15] This may be appropriate given the status of the student nurse anesthetist. Medicare payment policy may be implicitly ruling that more than one student should not be supervised at one time.

The total payment per case declines with higher supervision ratios. In 1991, under a 1:4 ratio (one anesthesiologist supervising four CRNAs), the total per case payment is 9 percent more than that for the solo anesthesiologist. But by 1996, team payments per case under the 1:4 ratio will be 24 percent higher than the solo rate. Total per case payments for supervision decrease with higher ratios as a result of further reductions of base units as the number of concurrent procedures increases.

Supervision of residents, CRNAs, and student nurse anesthetists results in different payments to anesthesiologists. Per case payment to anesthesiologists supervising two residents is 52 percent higher than when supervising two CRNAs or one CRNA and one resident. This difference remains constant through 1996. Per case payment for supervising more than one student nurse anesthetist equals payment for one case as though care is provided by the anesthesiologist or CRNA alone. Payment is not made for the second case.

Payment Per Hour. In this example, anesthesiologists receive $126.67 per hour in 1991 for working alone. This will decrease to $111.67 by 1996. The returns to anesthesiologists for supervising CRNAs are considerable, with gross hourly incomes increasing from $167.20 to $273.60, or 64 percent, for supervising four rather than two CRNAs in 1991. By 1996, the percent increase remains the same, with per hour incomes increasing from $147.40 to $241.20.

Incentives Associated with Payment to the Anesthesia Care Team

Current payment policy provides incentives that may not promote the most efficient delivery of care. In addition, this policy may contribute to reduced clinical access for CRNAs and student nurse anesthetists due to higher payments made to anesthesiologists for supervising residents.

The simulated payment levels for an inguinal hernia repair suggest that anesthesiologists face financial incentives to supervise as many CRNAs as possible as well as to supervise residents when given a choice. Anesthesiologists' supervision of CRNAs, however, is constrained by two policies. First, Medicare regulations specify that Part B will not pay for services furnished subsequent to induction when an anesthesiologist supervises more than four concurrent procedures. These services are considered a service to the provider and covered under Medicare's prospective payment system. Second, both base and time units are reduced when an anesthesiologist supervises two, three, and four CRNAs or a combination of one CRNA and one resident.[16]

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[16] The General Accounting Office is in the final stages of a congressionally mandated study (OBRA87) to determine whether current payments for CRNA supervision are excessive. The study looks at two questions: what effect did the OBRA87 payment reductions for supervision have on the use of CRNAs, and are payments for CRNA supervision excessive. The final report will be released in May 1991.

Table 11-4. Comparison of 1991 and 1996 Payment Levels Under OBRA90 Provisions

Inguinal Hernia Repair (4 RVUs, 90 minutes)			
Payment per Case	**1991**	**1996**	**1996 with Cap**
MD only	$190.00	$167.50	$167.50
CRNA only	155.00	167.50	167.50
Team Arrangement			
1:2 MD/CRNA Ratio			
Total payment	230.40	227.80	167.50
MD payment	125.40	110.55	50.25
CRNA payment	105.00	117.25	117.25
1:3 MD/CRNA Ratio			
Total payment	219.00	217.75	167.50
MD payment	114.00	100.50	50.25
CRNA payment	105.00	117.25	117.25
1:4 MD/CRNA Ratio			
Total payment	207.60	207.70	167.50
MD payment	102.60	90.45	50.25
CRNA payment	105.00	117.25	117.25
Teaching Arrangement			
MD payment supervising			
two residents	190.00	167.50	167.50
one CRNA/one resident	125.40	110.55	50.25
Income per Provider per Hour			
Anesthesiologists			
Working alone	126.67	111.67	111.67
Supervising			
two CRNAs	167.20	147.40	67.33
three CRNAs	228.00	201.00	101.00
four CRNAs	273.60	241.20	134.67
two residents	253.33	223.33	223.33
one resident/one CRNA	167.20	147.40	67.33
CRNAs			
Nonmedically directed	103.33	111.67	111.67
Medically directed	70.00	78.00	78.00

Conversion factors:

1991		1996	
anesthesiologists	$19.00	anesthesiologists	$16.75
nonmedically directed CRNA	$15.50	nonmedically directed CRNA	$16.75
medically directed CRNA	$10.50	medically directed CRNA	$11.70

Before implementation of the OBRA87 provision on reductions in base units for concurrent supervision, anesthesiologists who employed CRNAs received full payment for up to four concurrent procedures. Anesthesiologists who supervised hospital-employed CRNAs were paid for full base units, but time units were halved. The OBRA87 provisions were intended to reduce the windfall that supervising anesthesiologists were accruing by effectively being in two, three, and four places at one time. While it has saved money, this policy also appears to have reduced the incentive for supervising CRNAs. In the post-OBRA87 period, there is evidence that many anesthesiologists are less inclined to supervise more than two CRNAs at one time, despite the higher returns per hour worked that could be gained under 1:3 or 1:4 ratios. Use of the 1:2 ratio was reported by about 65 percent of survey respondents in 1990, compared with less than 53 percent reporting this ratio in 1987 (ASA 1990).

Possible explanations for the apparent movement from higher supervision ratios toward the 1:2 ratio are an expanding supply of anesthesiologists, concern among anesthesiologists that quality declines with higher supervision ratios, and the implementation of OBRA87 base unit reductions for the supervision of CRNAs. These reductions may have led anesthesiologists to evaluate their workloads and decide that the reduced payments would not sufficiently compensate them for the additional work that accompanies supervising multiple cases. This may have occurred despite the fact that hourly payments jump 36 percent when an anesthesiologist supervises three rather than two CRNAs -- and 20 percent more when a fourth CRNA is supervised. The reduction in the anesthesia conversion factor that will accompany the implementation of the Medicare Fee Schedule may reverse these trends by lowering earnings per hour in all practice situations. This could lead more anesthesiologists to work as members of the anesthesia care team or for those already in teams to supervise more CRNAs.

Discussions with some practicing anesthesiologists have suggested that the 1:2 practice ratio uses anesthesiologists' time very inefficiently. Rather than performing the services directly, the anesthesiologist supervises two highly trained CRNAs. Although TEFRA requires the supervising anesthesiologist to participate in key parts of the anesthesia care, there is still the potential for significant "down" time when cases are uncomplicated or routine. For this arrangement to be more efficient than solo provision of the service, the cost to the program for the CRNA would have to be less than half that of the anesthesiologist. Otherwise, the total payment to two CRNAs and one supervising anesthesiologist would exceed the payment to two anesthesiologists.

Incentives Affecting the Teaching Role

Anesthesiologists are better paid when they supervise residents than when they supervise CRNAs and student nurse anesthetists. This is because anesthesiologists can receive full base unit payment for concurrent supervision of residents for up to two cases, while base and time units are reduced as soon as a CRNA or student nurse anesthetist enters the team.[17] Some have speculated that the anesthesia manpower trends, described earlier, may be driven by the incentives created by this policy (HHS 1990). The reasoning behind this assertion is that competition exists among student nurse anesthetists, CRNAs, and anesthesia residents for operating room time and supervisory personnel within teaching hospitals. Payment policy that favors the supervision of residents over CRNAs and student nurse anesthetists places nonphysician practitioners at a disadvantage.

Recommendations for Change

The Commission's recommendation that fees paid to an anesthesia care team per case be capped at the solo anesthesiologist's level results from the lack of a basis for higher payments simply because a different mix of practitioners is involved in administering anesthesia. Because regional preferences of hospitals and practitioners appear to have greater influence on the choice of approach to anesthesia care than case-by-case triage, the Commission believes that payment policy should not favor one approach over the other in the absence of demonstrated additional benefits to patients.

This recommendation is contingent upon revision of the conversion factor for medically directed CRNA services that was established by OBRA90. The OBRA90 policy of setting medically directed CRNAs' payments at 70 percent of nonmedically directed CRNAs, if combined with a policy of capping per case payments at the solo anesthesiologist's level, would result in very low payments to supervising anesthesiologists. If the phasing in of OBRA90 proceeds, anesthesiologists supervising two or three CRNAs will earn less per hour than if they worked alone (Table 11-4, Column 4). Only teams with a 1:4 ratio would reward anesthesiologists for the additional effort associated with supervision, and the reward would be dramatically smaller than that under current policy. These changes in payment would threaten the continued existence of the anesthesia care team.

The major implication of the simulation is that it is not economically viable under current CRNA payment policy to implement a system that pays the same per case regardless of practitioner inputs. Either the CRNA payment at 70 percent of the nonmedically directed level is too high, or team care is not a viable practice arrangement. The Commission believes that supervising anesthesiologists should be paid enough to make it worthwhile to supervise CRNAs, whether as employers of CRNAs or as members of care teams working with hospital-employed CRNAs. CRNAs should also receive a fair payment for their part as care team members. The 70 percent level mandated by OBRA90 is too high given the constraint of a cap at the solo anesthesiologist's level. The Commission is optimistic that a split in per case payment between the anesthesiologist and the CRNA that is adequate for each can be achieved.

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[17] The Medicare program pays physicians who establish attending physician relationships with their patients under Part B. Part A pays hospital costs, including salaries for residents. This policy, which is embodied in Intermediary Letter 373 (1969), applies not only to anesthesiologists but to other physicians who establish an attending physician relationship with patients. To meet the requirement of an attending physician relationship, a teaching physician must "be present and ready to perform any service performed by a physician in a nonteaching setting when a major surgical procedure or a complex or dangerous medical procedure is performed; his presence as an attending physician must be necessary (not superfluous as where, for example, the resident performing the procedure is fully qualified to do so) from the medical standpoint." The relationship is expected to be one-to-one; however, in the case of anesthesiologists, carriers pay full base and time units when there is concurrent supervision of two residents. Some carriers reduce time units for both cases.

Capping team payments at the solo rate would require a phase-in period. This is because in states where the anesthesiologists' conversion factor is below the national average, supervising anesthesiologists could suffer large cuts in revenues before they are brought up to the national conversion factor that will accompany the Medicare Fee Schedule. Since more team care is seen in states having relatively low conversion factors, this policy change could have significant negative impact absent a transition period.[18]

To remedy an apparent inequity in current policy, the Commission also recommends that anesthesiologists who supervise two residents or one resident and one CRNA be paid on the same basis as when they supervise two CRNAs. This recommendation is made to bring anesthesiologists into parity with other teaching physicians. As noted above, other teaching physicians can establish an attending physician relationship with their patients and receive full payment for their services. But anesthesiologists are unique in that they receive full payments for two concurrent cases in which the residents are the continuous hands-on practitioners.

The same payment scheme that the Commission recommends for CRNA supervision could be applied to resident supervision. For example, when an anesthesiologist supervises one resident, he or she will receive full payment, the same as other teaching physicians who meet the criteria for an attending physician relationship. When an anesthesiologist supervises two residents, payments for both cases will be capped at the solo anesthesiologist's rate, but the supervising anesthesiologist will receive only the portion of the payment that would be provided if he or she supervised two CRNAs.

This policy would bring about equity in two ways. First, it would level the playing field between anesthesiologists and other teaching physicians. Second, it would render teaching anesthesiologists financially indifferent to the type of practitioner, resident or CRNA, they supervise.

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[18] One way that a transition could be achieved would be to create a floor below which anesthesiologists' conversion factors could not fall. This could be set at the 1991 national average and financed with some of the savings expected from the single-payment system.

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CHAPTER 12

PAYMENTS TO ASSISTANTS-AT-SURGERY

In the Omnibus Budget Reconciliation Act of 1989 (OBRA89), the Congress directed the Commission to make recommendations on issues concerning payment for assistant-at-surgery services.[1] Section 6138 of OBRA89 specified that the following issues be addressed:

- the necessity and appropriateness of using an assistant at surgery;
- the use of physician and nonphysician assistants at surgery;
- the appropriateness of providing for payments and the appropriate level of payments under Medicare for assistants at surgery; and
- the effect of OBRA86 amendments on the use of registered nurses as assistants at surgery, and whether reductions described in section 9338(d) of OBRA86 have been implemented.

This chapter begins by describing the current payment policy for assistants-at-surgery. Next, it examines the variation in the use of physician assistants-at-surgery across geographic areas. It then reviews alternative policies to determine when Medicare should pay for an assistant, the level of payment for assistants under the Medicare Fee Schedule, and the method of payment to nonphysician practitioners.

RECOMMENDATIONS

In order to reduce inappropriate utilization of assistants-at-surgery, Medicare should develop profiles on their use. Where significant variations are noted, educational feedback programs that encourage physicians to explore the causes and explanations for such variation should be developed by the Health Care

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[1] The Commission wishes to thank Sally Trude of the RAND Corporation for her analytical contributions to this chapter.

Financing Administration (HCFA) with the assistance of specialty societies, Peer Review Organizations (PRO), and carriers. If inappropriate utilization continues after this intervention, physicians should be subject to medical audit.

Payments for physicians serving as assistants-at-surgery should reflect the estimates of physician work derived from the Hsiao study. Until relative work values are developed for more procedures, it would be appropriate to pay assistants-at-surgery for all procedures at 20 percent of the surgical payment under the Medicare Fee Schedule.

In developing its list of those procedures that require an assistant less than 5 percent of the time (to implement Sec. 4107 of the Omnibus Budget Reconciliation Act of 1990), HCFA may have included procedures that data suggest are done infrequently because the assistance required is often provided by residents in teaching hospitals. HCFA, in consultation with the appropriate specialty societies, should remove such procedures from the list of those for which payment for an assistant has been eliminated.

CURRENT PAYMENTS FOR ASSISTANTS-AT-SURGERY

Current Medicare law allows payment for physicians serving as assistants-at-surgery to be no more than 16 percent of the payment for the principal surgeon. Physician assistants (PAs) who serve as assistants-at-surgery are paid no more than 65 percent of that rate.[2] There are no regulations establishing when it is necessary or appropriate to use an assistant.

Medicare Payment Policy

Under Medicare, a reimbursable assistant-at-surgery service occurs when a physician or PA actively assists the primary surgeon.[3] While payments made to physicians who assist at surgery traditionally have been limited to 20 percent of the prevailing charge for the surgery, OBRA90 reduced this to 16 percent. Additionally, OBRA90 prohibited payment to assistants for procedures in which they were used nationally less than 5 percent of the time prior to 1991. Payment cannot be made for an assistant-at-surgery service if the surgery occurs in a teaching hospital that has a training program related to the medical specialty required for the procedure and a qualified resident is available to perform the service.[4]

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[2] OBRA87 allowed nurse midwives to be paid for services provided during the maternity cycle that would have been paid if they had been provided by physicians. While nurse midwives could be paid for assistant-at-surgery services at the 65 percent rate, there were no paid claims for such services in 1989.

[3] Although HCFA does not operationally define assistant-at-surgery, the role includes "maintaining adequate exposure in the operating field, cutting suture materials, clamping and ligating bleeding vessels and, in selected instances, actually performing designated parts of the procedure" (Lewit and others, 1980, p. 917).

Prior authorization is required for the payment of assistants during cataract surgery. Medicare regulations prevent an assistant from billing Medicare or the beneficiary for cataract surgery that has not been approved by the local PRO or Part B carrier. The surgeon may not add the charge for services performed by an assistant to his or her bill.

Before January 1, 1987, Medicare did not directly compensate physician assistants for their services as assistants-at-surgery. Their salaries were paid by the hospital from the Part A payment or by the physician from the surgical payment. OBRA86 allowed PAs to receive 65 percent of the amount that physicians receive when serving as assistants. Payments for these PA services are made to the PA's employer on an assigned basis. Expenditures for this provision were to have been subtracted from periodic payments to hospitals so that there would be no duplicate payments for these services. This provision, however, was never implemented and was subsequently repealed in OBRA90.[5]

Medicare Expenditures for Assistants-at-Surgery

Medicare payments for assistants-at-surgery constitute about 1.3 percent of Medicare physician expenditures. In 1988, all coronary artery bypass operations (*Current Procedure Terminology* codes 33510-33516) constituted about 20 percent of total expenditures for assistants. Utilization of assistants in cataract surgery (CPT codes 66983-66985) comprised 6 percent of the expenditures. Total expenditures for the top 20 codes accounted for 54 percent of all assistant-at-surgery expenditures (Table 12-1).

Most assistance is performed by surgeons. General surgeons received 28 percent of payments for assistants; orthopedic surgeons, 12 percent; ophthalmologists, 11 percent; and thoracic surgeons, 17 percent. Primary care physicians received about 14 percent of payments to assistants (Trude 1990).

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[4] Payment for assistants-at-surgery in a teaching hospital may occur, however, if (1) there is no qualified resident; (2) a physician is used in place of a resident in an emergency, life-threatening situation; or (3) the primary surgeon never uses residents in pre-, peri- or postoperative care.

[5] The Congressional Budget Office estimated the cost of the repeal of this provision at $45 million over the 1991-1995 period.

Table 12-1. Top 20 Assistant-at-Surgery Procedures

Code	Description	Percent of Assistant-at-Surgery Allowed Charges
33512	Coronary Artery Bypass	7.0%
33513	Coronary Artery Bypass	6.2
66984	Remove Cataract	5.6
27447	Total Knee Replacement	5.1
27130	Total Hip Replacement	4.9
33511	Coronary Artery Bypass	2.9
35301	Rechanneling of the Artery	2.7
33514	Coronary Artery Bypass	2.6
44140	Partial Removal of Colon	2.5
47605	Removal of Gallbladder	2.1
27244	Repair of Femor Fracture	2.0
27236	Repair of Femor Fracture	1.5
35081	Repair Defect of Artery	1.4
19240	Extensive Breast Surgery	1.4
33405	Replacement of Aortic Value	1.4
49505	Repair Inguinal Hernia	1.1
47600	Removal of Gallbladder	1.1
47610	Removal of Gallbladder	0.9
58150	Total Hysterectomy	0.9
33516	Coronary Artery Bypass	0.8

Source: BMADI 1988.

PATTERNS OF USE OF ASSISTANTS

There is wide variation in the use of physicians serving as assistants-at-surgery. In examining this phenomenon, it is important to analyze the use of assistants-at-surgery in nonteaching hospitals because of the regulations limiting payment for their use to these institutions.[6] Because the availability of other health professionals may be different in urban and rural areas, the analysis is shown separately for these areas as well. Within each site of service, the use of assistants varies widely across geographic regions (Table 12-2). For urban inpatient operations, the lowest regional rate (East South Central) is about one-third of the highest regional rate (Pacific). Variations are even greater for outpatient surgeries.

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[6] To perform this analysis, Part B records from the Beneficiary File (BMADIV) had to be matched with the Part A records. This analysis was done with 1986 data.

Table 12-2. **Percentage of Surgeries with a Physician Assistant-at-Surgery in Non-Teaching Hospitals by Urban/Rural Status, 1986**

	Inpatient Surgeries		Outpatient Surgeries	
Census Region	Urban	Rural	Urban	Rural
New England	24.6	30.9	2.4	1.6
Mid-Atlantic	19.0	20.5	7.7	1.3
South Atlantic	15.8	11.9	1.7	1.1
East North Central	17.1	21.2	1.4	1.6
East South Central	12.3	11.2	1.1	0.4
West North Central	14.6	23.9	0.7	0.7
West South Central	18.7	19.7	2.8	0.7
Mountain	33.2	36.0	9.4	7.1
Pacific	35.6	36.2	12.6	10.8
All Regions	21.1	20.1	4.9	1.9

Source: Trude (1990).

To determine if the regional variations are caused by differences in the mix of services, utilization rates for specific procedures across carriers were examined.[7] The variation is even wider at the procedure/carrier level. The rate for inguinal hernia is 5 percent for one carrier, for instance, while for another it is 81 percent (Table 12-3).

Some of the variation in use of assistants might be due to the substitution of operating room nurses or physician assistants for physicians. Claims data do not permit examining this because they have no information on the uses of nurses and data on PAs are only recently available. Nevertheless, it is instructive to analyze the utilization rate in New Jersey, which allows only physicians to serve as assistants-at-surgery. One would expect that the use of physicians as assistants in New Jersey would be higher than in other states, because there is no possibility for substitution. Yet New Jersey's rate is in the bottom half of utilization rates for the states (29th of the 50 states and the District of Columbia). Its rate (.194) is about half the rate of Idaho (.398), Colorado (.381), Arizona (.367),

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[7] This analysis is limited to carriers who reported 100 or more of the specific surgery in nonteaching hospitals.

Nevada (.365), Oregon (.363), and California (.362). This suggests that the use of nurses or physician assistants does not explain much of the variation in the use of physicians as assistants-at-surgery.

Table 12-3. Use of Physician Assistants-at-Surgery for Selected Procedures in Non-Teaching Hospitals, 1986*

Codes	Description	Carriers	Minimum Frequency	Maximum Frequency
27236	Femoral Fracture	5	.18	.82
27244	Femoral Fracture	8	.15	.80
35301	Thromboendarterectomy	5	.38	.94
44140	Colectomy	7	.50	.84
47605	Cholecystectomy	6	.37	.90
49505	Inguinal Hernia	9	.05	.81
66983	Cataract	13	.01	.61
66984	Cataract	45	.00	.57

Source: Rand Corporation, Part A - BMADIV Linked File (1990).

Note: *Carriers with greater than 100 surgeries.

After accounting for the use of residents and nonphysician practitioners as assistants-at-surgery, variation in the use of assistants remains wide. As Wennberg has pointed out, such variation can be an indicator of disagreement among physicians about what is the most appropriate medical practice (Wennberg and Gittelsohn 1982). This variation also suggests that the use of assistants-at-surgery is often discretionary and that Medicare may be paying for medically unnecessary services.

PAYING FOR APPROPRIATE USE OF ASSISTANTS-AT-SURGERY

The Congress has asked the Commission to make recommendations on when it is appropriate to pay for assistants-at-surgery. The primary surgeon's decision to use an assistant-at-surgery is an imprecise, complicated one involving information on the complexity and technical difficulty of the procedure, as well as the condition of the patient. Some operations, such as coronary artery bypass (CPT codes 33510-33528), require four hands. Other operations, such as transurethral resection of the prostrate (CPT code 52601), rarely need an assistant. Assistants for other surgeries are needed only in some instances.

The use of assistants may vary with other factors, such as the risk to the patient and practice efficiency. Although a procedure may not require an assistant in most instances, the health status of the patient may indicate that using an assistant would reduce the risk of mortality or morbidity. The use of an assistant may reduce operative time which, in turn, could decrease risks to patients in poor health. In other instances, the prime motivation for using an assistant is to increase the primary surgeon's practice efficiency. Finally, whether a physician serves as an assistant may depend on the level of support provided to the principal surgeon by the hospital staff.

Wide variations in the use of assistants demonstrate the need to develop practice guidelines or other mechanisms that can help Medicare pay only for those instances where assistants-at-surgery are medically necessary. While the Agency for Health Care Policy and Research (AHCPR) is developing practice guidelines for specific conditions, they are not yet available. It is expected to take a decade to complete guidelines for the most common conditions. Even then they are unlikely to encompass the use of assistants-at-surgery. Since the development of guidelines for the use of assistants is not imminent, Medicare needs measures that can immediately assist it in paying only for those uses of assistants that are medically necessary.

Policy Options

Short-term options for paying only for medically necessary uses of assistants-at-surgery include (1) prior authorization for the use of assistants for procedures in which their involvement is considered discretionary; (2) a comprehensive payment for surgery that would include compensation for the use of an assistant; and (3) a program of profiling accompanied by educational feedback and, when appropriate, medical audits. The adoption of any short-term option, however, should not diminish efforts to develop guidelines.

Prior Authorization. Under a policy of prior authorization for the use of assistants-at-surgery, the principal surgeon would have to request authority from the PRO or carrier to use an assistant. Without this, no payment for the assistant would be made except in emergency situations.

Prior authorization for cataract surgery, which was instituted in 1987, appears to have been successful. From 1986 to 1988, the use of assistants for extracapsular cataract removal (CPT 66984) and intracapsular cataract extraction (CPT 66983) dropped from 6.7 percent to 4.1 percent and 8.4 percent to 6.0 percent, respectively. Trude (1990) estimated that prior authorization for cataract surgery saved Medicare $11.7 million per year.

To simplify the implementation of a prior authorization policy, the policy should be limited to those surgeries in which use of assistants is generally considered discretionary. These surgeries could be identified by geographic variations in current utilization rates and by a consensus process of experts.

Since some procedures are done infrequently, calculation of the utilization rates would have to be based on the universe (rather than a sample) of claims for nonteaching hospitals. This would necessitate developing a data file that contained all Part A and Part B claims. In the future, the Common Working File can be used to calculate these rates. Currently, estimated rates can be made from the Part B Medicare Annual Data Procedure File (BMAD I) after controlling statistically for surgeries provided in teaching hospitals.

After the procedures are designated for prior authorization, criteria for prior authorization must be developed. While the PROs and carriers had developed such criteria in the past, it would be better for HCFA to do this to ensure consistency across the nation. For example, for cataracts, each PRO needed to establish written criteria on the ocular and general medical conditions that justified the use of an assistant. This was relatively easily implemented, because the PROs or carriers had to develop only one policy for the entire family of cataract procedures.

Criteria for many codes would be necessary to implement prior authorization for all assistant-at-surgery services. The process could be simplified by basing such criteria on the complexity of the operation. It could be further simplified by developing prior authorization policies for those procedures that have the largest variation in use and that constitute significant expenditures.

The costs of expanding prior authorization, however, appear to outweigh the benefits. HCFA would incur costs to develop and implement guidelines. While HCFA currently requires prior authorization for some procedures, it has developed a plan to eliminate mandatory preprocedure reviews that are now conducted by PROs. Requiring prior authorization for one component of the operation, such as the use of an assistant, would contradict the current policy thrust.

Comprehensive Surgical Payment. Another option is to pay the primary surgeon a comprehensive fee that would include a payment for the assistant. If an operation always required an assistant, the comprehensive fee would include the full payment for the primary surgeon and the assistant. If an operation required an assistant in 10 percent of the cases, the comprehensive fee would include the primary surgeons's payment plus one-tenth of the payment for an assistant. The primary physician would be at financial risk for the use of an assistant. If the primary surgeon did not use an assistant, he or she would retain the extra payment.[8] If the primary surgeon used an assistant, he or she would pay the assistant a privately negotiated fee, or HCFA would pay the assistant directly and subtract that amount from the principal surgeon's payment.

The rationale underlying this option is that the primary surgeon who decides to use an assistant is placed at financial risk for the decision. It would avoid the hassles involved in obtaining prior authorization. Nevertheless, financial incentives may dampen both appropriate and inappropriate use of assistants. Additionally, the policy assumes that payments for assistants would average out over the caseload of the individual physician. Some physicians, however, may treat a greater number of cases that require the use of assistants.

Some physicians would argue that this proposal violates the ethical prohibition on fee splitting. But the basis for the ethical concern about fee splitting is when it is a kickback for a referral. Most assistants are not the referring physician. In the cases where they are, the ethical problem would exist whether the fee is bundled or not.

Profiling. Profiling provides an alternative policy for decreasing unnecessary use of assistants. This tool includes a variety of techniques that can be employed to examine the use of assistants by individual physicians or by all physicians in a specified geographic area. It could be used with educational feedback in an attempt to modify physician behavior[9] and could be linked with a medical audit process that would deny payment for services judged inappropriate. Specialty societies could be involved in developing and implementing the educational feedback process.

To profile the use of assistants, data on utilization rates must be collected for both geographic areas and physicians. The data would be analyzed to identify those with unusual utilization of assistants. Since utilization rates would be based on the universe (rather than on a sample) of claims for nonteaching hospitals, it would be necessary to use a data file that contained all Part A and Part B claims, such as HCFA's Common Working File.

The carriers or PROs would develop profiles of individual surgeon's use of assistants-at-surgery and compare them with use by peer groups of physicians. If use by a surgeon or groups of surgeons were unusual (for example, one or two standard deviations above or below the mean), educational peer review through specialty societies, PROs, or carriers could be undertaken. Such a process would review information on the patterns of utilization of assistants. It would permit assessing the accuracy of the data and clarifying the reasons for the unusual patterns with the involved physicians and their peers. Prior experience has indicated that this process can influence practice patterns. If the unusual utilization pattern persisted and the carrier or PRO found it unjustified after a peer review of the medical records, the primary surgeon would be required to make refunds to Medicare.

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[8] The rules for payment in a teaching hospital would continue.

[9] This type of profiling would be similar to that done by the Maine Medical Assessment Foundation. For information on that program, see Keller and others, 1990.

Less intrusive approaches, such as profiling with educational feedback, are a relatively "hassle-free" way of alerting physicians to potential problems with their practice decisions. The use of this technique has had mixed results. Although a review of the strategies for reducing cesarean section rates found that less intrusive approaches were the least successful (Stafford 1990), it did not evaluate profiling with educational feedback by peer physicians. In Maine, a feedback approach resulted in fewer laminectomies, hysterectomies, and hospital admissions for pediatric medical conditions (Keller and others 1990). Profiling programs that use feedback along with medical audits, such as the one instituted in Pennsylvania, appear to reduce utilization (Schwartz and others 1989).

The use of profiling for assistants-at-surgery is consistent with the rationale underlying Volume Performance Standards: to provide the medical profession with collective incentives to curb the growth in the volume of services. Through education programs and the dissemination of practice guidelines developed and implemented with the participation of medical organizations, the medical profession can influence decisions made by individual physicians. Given the absence of guidelines for the use of assistants, profiling can focus educational efforts by employing available data to identify atypical and possibly inappropriate utilization. Therefore, the Commission recommends profiling with educational feedback to reduce inappropriate use of assistants-at-surgery.

THE AMOUNT OF PAYMENT FOR ASSISTANTS

Under OBRA90, Medicare will pay up to 16 percent of the prevailing charge of the surgical service to the assistant. This rate is lower than the estimates of resource costs derived from the study by Hsiao and his colleagues (1990). When combined with the recent and anticipated reductions in payments for surgical procedures, the 16 percent rule may make it difficult for surgeons to recruit assistants.

The Commission believes that the percentage should be based on estimates of resource costs. Basing the assistant's payment on such estimates would be consistent with the method for determining the payment to the primary surgeon. From Phase II of the Hsiao study, assistant-at-surgery work values are currently available only for a small number of procedures under the following assistant-at-surgery vignettes:

- Cholecystectomy with negative cholangiography (CPT code 47605)
- Right colectomy with anastomosis (CPT code 44140)
- Modified radical mastectomy (CPT code 19240)
- Elective below-knee amputation (CPT code 27880)
- Revision of total knee arthroplasty, all components (CPT code 27487)
- Total shoulder replacement (CPT code 23472)
- Open reduction and internal fixation of a distal femoral fracture (CPT code 27514)

Assistant-at-surgery work values range from 34 percent to 49 percent of the primary surgeon's intraservice work values and from 15 percent to 27 percent of the primary surgeon's total work values (Table 12-4).

Given the available information from Phase II of the Hsiao study, it appears appropriate to set payments for assistants-at-surgery services at 20 percent of the Medicare Fee Schedule payment to the primary surgeon. While the proposal for Phase III of the Hsiao study does not explicitly mention developing values for assistants, such a task seems to fall within its general scope and would be useful for the development of the fee schedule. After resource-based values for more assistant-at-surgery services are developed, it might be possible to use different percentage levels for categories of procedures in order to simplify the administration of payments.

PROCEDURES FOR WHICH PAYMENT WAS ELIMINATED

OBRA90 eliminated payment to assistants-at-surgery for procedures that involved an assistant in less than 5 percent of the cases. In implementing this provision, payments related to some procedures that require assistants may have been eliminated inappropriately. To develop the list of procedures for which assistants would no longer receive payment, HCFA calculated the utilization rates from payment records. Since Medicare does not pay from Part B for assistant-at-surgery services provided by residents in teaching hospitals, procedures that are predominately done in these institutions may be on the list even though they require using assistants. The Commission recommends that HCFA, assisted by specialty societies, identify such procedures and resume paying for them when they require the use of assistants and are performed in nonteaching hospitals.[10]

Table 12-4. Comparison of Work for Selected Surgeries for the Primary Surgeon and an Assistant-at-Surgery

					Percentage of work of assistant to work of primary surgeon	
CPT Code	**Surgeon**	**Service Description**	**Intra-work**	**Total-work**	**Intra-work**	**Total work**
19240	Assistant	Modified radical mastectomy	265	285	45%	24%
19240	Primary	Modified radical mastectomy	613	11	81	
44140	Assistant	Right colectomy w anastomosis	300	320	49	27
44140	Primary	Right colectomy w anastomosis	677	1178		
47605	Assistant	Cholecystectomy w neg cholangiography	240	260	43	26
47605	Primary	Cholecystectomy w neg cholangiography	554	995		
27880	Assistant	Elective below-knee amputation	165	185	37	15
27880	Primary	Elective below-knee amputation	442	1218		
27487	Assistant	Revis total knee arthoplasty, all comp	497	517	36	22
27487	Primary	Revis total knee arthoplasty, all comp	1364	2346		
27514	Assistant	Open reduction & int fix distal femoral fx	312	332	36	19
27514	Primary	Open reduction & int fix distal femoral fx	872	1757		
23472	Assistant	Total shoulder replacement	364	384	34	20
23472	Primary	Total shoulder replacement	1072	1899		

Source: Hsiao (1990).

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[10] In order to accomplish this, HCFA could confer with specialty societies or publish the list for comment.

PAYMENTS FOR NONPHYSICIAN PRACTITIONERS

Currently, physician assistants receive up to 65 percent of the amount that a physician is paid for assisting at surgery. Additionally, nurse midwives are covered for such services, but seldom perform them for Medicare beneficiaries.

The Commission was asked by the Congress to study how the OBRA86 provision allowing direct payment of PAs affected the use of nurses as assistants. After exploring the issue and considering the data requirements of such a study, the Commission has concluded that it is not possible to provide a definitive assessment of the impact.

The amount of the direct payment to PAs resulting from the OBRA86 provision was to be deducted from periodic payments to hospitals to make the provision budget neutral. HCFA, however, did not immediately implement regulations to offset these payments, and the Congress recently repealed the provision. Without the offset, there is a financial incentive to employ PAs rather than nurses as assistants.

The American Nurses Association and the Association of Operating Room Nurses (AORN) are concerned that this OBRA86 provision biases the market against the employment of nurses as assistants. Both organizations have provided some anecdotal evidence about the negative impact of this provision. The total number of AORN members who serve as assistants has grown, however.

Nevertheless, a scientifically valid examination of this issue would require data on the employment of nurses as assistants prior to and sometime after the implementation of this OBRA86 provision. Such data do not exist. The difficulty of controlling for other market and nonmarket forces such as the nursing shortage and decreased educational payments under Part A are further impediments to such a study. Although the Commission could not conduct a study of the impact of this provision, it considered two options to the current policy.

Policy Options

Of the various nonphysician practitioners who provide assistant-at-surgery services, Medicare pays only PAs on a fee-for-service basis. There are two alternatives to the current policy. One would pay for assistant-at-surgery services provided by all qualified practitioners on a fee-for-service basis. The other would return to the approach of covering the costs of nonphysician assistants through Medicare hospital payments or physician surgical fees. After considering alternative policies, the Commission decided that it was not yet ready to make any recommendation for change in current policy.

Pay for Assistant-at-Surgery Services Provided by All Qualified Nonphysician Practitioners. Current policy appears to create financial incentives to employ physician assistants instead of other nonphysician practitioners. It could be replaced by one that eliminates this incentive by extending fee-for-service payment to nurses and, possibly, to other nonphysician practitioners.

There are disadvantages to this option, however. Costs would increase, because Medicare would be making duplicate payments for services and additional utilization would be facilitated. It is difficult to estimate increases in services and costs that would result from provider responses to this option.

To develop this option in a budget-neutral fashion, the Medicare Fee Schedule conversion factor would have to be lowered, reducing payments for physician services. If the conversion factor were not lowered, there would be increased federal expenditures for this option. Given the budget provisions of OBRA90, these increases would have to be offset by decreased expenditures in other areas, increased premiums, or taxes. Additionally, total beneficiary copayments for assistant-at-surgery services would increase.

Defining the qualifications of assistants who would be eligible for payments under this option would be difficult. Currently, the criteria for qualifying to serve as an assistant are established by each hospital.[11] Medicare does not have a national credentialing process to determine who has the necessary technical and cognitive skills to provide assistant-at-surgery services. Some uniform standards would be necessary because there are great differences in education for assistant roles among PAs, nurses, and surgical technicians and within each group.

Among professional societies, there is no consensus on qualifications for assisting at surgery. For example, some surgical societies contend that a qualified assistant-at-surgery either should be able to complete the operation or should be a surgeon trained in the appropriate specialty. Specifically, the American College of Surgeons (ACS) "supports the concept that, ideally, the first assistant to the surgeon at the operating table should be a qualified surgeon or resident in a surgical education program approved by the appropriate residency review committee and accredited under the Accreditation Council for Graduate Medical Education" (ACS 1983). Some physicians, such as family practitioners and internists, and all nonphysician practitioners would be excluded from providing assistant-at-surgery services under this definition. Nevertheless, the ACS recognizes this is not practical. It has, therefore, accepted the practice of using physician assistants who have additional surgical training and meet national standards as assistants-at-surgery. In the absence of more completely trained practitioners, the ACS's position encompasses the use of nurses and surgical technicians.

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[11] The Joint Commission on Accreditation of Health Care Organizations has no position on the use of nonphysician practitioners as assistants-at-surgery.

The American Academy of Physician Assistants, AORN, and the Association of Surgical Technologists have proposed that physicians, residents, physician assistants, certified perioperative nurses, or surgical technicians "who [are] authorized to practice in the state in which the services are performed, and who [have] completed an educational program or appropriate training which prepares them to complete the required credentialing process" should be allowed to provide assistant-at-surgery services. According to these groups, the credentialing process should determine whether the practitioner:

- possesses appropriate manual dexterity and is technically proficient;
- has an in-depth knowledge of surgical asepsis, surgical anatomy, physiology, and operative technique related to the specific procedures in which assistance is provided; and
- has sufficient education or medical training to make appropriate intraoperative decisions concerning the care of the patient and the progress of the intended procedure in the context of the patient's medical history and physical condition should the surgeon be unable to complete the procedure.

Given the varied training of nonphysician practitioners who assist in operations, it is difficult to determine which practitioners might meet these conditions, particularly the last criterion.

The lack of a definition of what a practitioner must do to be paid for assistant-at-surgery services (other than being actively involved in the surgery) is also a disadvantage. That would make it hard to distinguish between services performed by registered nurse first assistants and those done by scrub nurses.

Even if there were agreement on the appropriate credentials and the particular tasks involved in assisting, this option would not only increase the number of fee-for-service providers but also create incentives to provide additional services. This would be counter to the recommendations of the Commission and the approach adopted by the Congress to control the growth in volume of services through Volume Performance Standards. Finally, if additional providers, such as scrub nurses, who traditionally have been paid in other ways, seek separate fee-for-service payments under Medicare, the volume and cost problem would be exacerbated.

No Part B Payment for Nonphysician Surgical Assistants. Under this option, Medicare would return to its pre-1986 policy, whereby nonphysician practitioners are paid by their employers. The employers of these practitioners would have financial incentives to control and monitor the volume of services these practitioners provide and to use them in a way that conserves resources.

Returning to the prior policy would save Medicare about $45 million in the next five years by eliminating separate payments to PAs. Finally, this option would also be uniform for all nonphysician practitioners with respect to the assistant-at-surgery policy.

This option may have disadvantages, however. If employers of PAs cannot receive separate payment to provide assistant-at-surgery services, the budgetary savings might be somewhat offset because physicians who are paid more may be substituted for nonphysicians. This option could reduce access to surgical assistants in rural areas. To overcome this disadvantage, Medicare could allow separate payments to physician assistants and nurses in all rural areas or in all rural Health Professional Shortage Areas. This could potentially diminish shortages of assistants and enhance access to their services.

While the Commission is troubled by further extensions of fee-for-service payment under Medicare Part B, it is also concerned with the inconsistent treatment of physician assistants and other nonphysician practitioners under current law. Although the Commission considered recommending the elimination of fee-for-service payment for surgical assistance by PAs, it concluded that this option might disrupt current practice arrangements and, therefore, must be further explored. In the meantime, the Commission is not recommending any change in current policy.

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CHAPTER 13

PAYMENT FOR ELECTROCARDIOGRAMS

An electrocardiogram (EKG) is a noninvasive test that is useful in diagnosing a variety of conditions affecting the heart. Medicare Part B paid $580 million for performing and interpreting 28 million EKGs in 1988. Although EKGs are often essential, it is believed that many EKGs performed are not medically necessary. In addition, both the technical and professional components of EKGs have been overvalued. These circumstances have resulted in considerable excess cost to Medicare.

The Congress addressed this problem in the Omnibus Budget Reconciliation Act of 1990 (OBRA90) by limiting separate payments to physicians for EKG interpretation beginning in 1992.[1] The law does not affect payment for the technical component. Some believe OBRA90 effectively bundles payment for EKG interpretation with visits, thereby eliminating economic incentives for overutilization. Others are concerned that payment for EKG interpretation will be inequitable and not related to resource costs.

The Commission shares the congressional goal of ensuring appropriate utilization of EKGs to save unnecessary expenditures and to ensure quality medical care. It is concerned, however, that the OBRA90 approach to controlling cost and utilization of EKGs should be made more consistent with payment under a resource-based fee schedule.

There are alternative ways to address the problems of overpricing and overutilization. Resource-based prices would correct the overvaluation of the professional and technical components of EKGs. Practice guidelines and physician profiling, aided by the incentives provided by the Volume Performance Standard (VPS), could help monitor and control overutilization. The Commission is exploring ways to bundle EKGs, laboratory, and procedural services with visits. To be equitable in a system without specialty differentials, such methods will require taking into account diagnosis or other factors.

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[1] The law states that "If payment is made . . . for a visit to a physician or consultation with a physician and, as part of or in conjunction with the visit or consultation there is an electrocardiogram performed or ordered to be performed, no payment may be made . . . with respect to the interpretation of the electrocardiogram . . . ." (OBRA90 Section 4109(a)).

This chapter provides information on EKG payment, prices, and utilization, and then describes and evaluates options for reducing overutilization. It concludes with a discussion of the budget implications of the Commission's recommended approach.

RECOMMENDATIONS

The Commission supports the congressional goal of ensuring that the price and utilization of electrocardiograms are appropriate. Bundling EKG interpretation with visits would be inequitable unless visit payment varied by diagnosis or other factors. The Commission plans to examine alternative methods of bundling EKG, laboratory, and procedural services with visits, to determine whether a satisfactory method can be derived. While methods for bundling are being developed and assessed, the Congress should modify OBRA90 and pay for EKGs separately from visits at the final resource-based price for both the professional and technical components.

To avoid reducing payments for other services by paying for all EKGs (albeit at a lower price), the transition to final fee schedule values should be accelerated for those procedures surveyed for the first time in Phase II of the Hsiao study that are considerably overvalued.

To address overutilization of EKGs, Medicare should foster development of practice guidelines for the test, profile physicians' use of EKGs, and provide educational feedback. Physicians who continue to provide the service at rates substantially different from the norm should be subject to medical audit.

CURRENT PAYMENT FOR EKGs

Twelve-lead EKGs and rhythm strips[2] presently can each be billed as complete services, or the technical and professional components can be billed separately. Physicians bill only for the professional component of inpatient EKGs; the technical component is considered hospital overhead that is included in Medicare Part A payments to hospitals. Hospital

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[2] A 12-lead EKG is the standard test. Determining the type of rhythm controlling the heart's contractions sometimes requires a longer recording of selected leads. This is known as a rhythm strip.

EKGs ordinarily are interpreted in batches by a hospital-designated physician who bills for the service.[3]

In 1988, Medicare Part B paid physicians approximately $580 million for performing and interpreting 27 million EKGs and one million rhythm strips (Table 13-1). More than 96 percent of the charges were billed under two *Current Procedural Terminology* (CPT) billing codes: 93000 (12-lead EKG complete) and 93010 (12-lead interpretation only). Of the total, 60 percent was spent in doctors' offices, 30 percent in hospitals for inpatients, and 8 percent in outpatient departments or ambulatory surgical centers. While more EKGs were performed on inpatients than on outpatients, total Part B payments to physicians were greater for outpatient EKGs because Medicare Part A paid for the technical component of inpatient EKGs.

EKGs were included in the OBRA89 list of overvalued procedures subject to payment reductions. Through 1991, two 9-percent reductions have been taken for 12-lead complete and 12-lead interpretation only, resulting in mean allowed charges of approximately $29 and $10.50 respectively. The mean allowed charge for the technical component, after two 8-percent reductions, is now $20 (Table 13-2).

THE APPROPRIATE PRICE FOR EKGS

It is generally agreed that EKGs have been overpriced. This section describes how the Medicare Fee Schedule will correct this.

Professional Component

The work involved in interpreting an EKG is not negligible. The professional work of interpreting EKGs is different from that of a simple laboratory test. The distinction is between the professional work that is involved in determining what the result of a test is and the work of integrating that result into clinical decisionmaking about the patient. Chemistry panels produce results that do not require further interpretation by the clinician to become a result: the result of a potassium test *is* 4.0. The meaning of that result in the context of the patient's condition is then part of the intellectual work of a visit. However, EKGs require professional work to produce a result: the tracings are not final results in and of themselves. This professional work requires training, judgment, and effort.

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[3] An anomaly in payment occurs when the attending physician in a hospital or emergency department orders, interprets, and acts upon the EKG before the hospital's reading arrives. The treating physician is not paid for the interpretation even if it is the only one used in patient care. This also occurs with other diagnostic services such as X-ray interpretation. In these circumstances, the hospital's interpretation is a quality assurance activity.

Table 13-1. 1988 Charges and Volume for Six EKG Billing Codes

CPT Code	Description	Mean Allowed Charge	Volume (Millions)	Total Charges (Millions)
93000	12-lead complete	$35	10	$340
93005	12-lead technical only	24	0.2	5
93010	12-lead interpretation only	13	17	220
93040	rhythm complete	16	0.5	8
93041	rhythm technical only	15	0.04	0.5
93042	rhythm interpretation only	10	0.7	7
Total			28	580

Source: Commission analysis of 1988 BMAD data.

Table 13-2. Estimated Mean Allowed Charges for EKGs Since 1988

Year	12-lead Complete (CPT Code 93000)	12-Lead Technical Only (CPT Code 93005)	12-lead Interpretation Only (CPT Code 93010)
1988	$35.00	$23.50	$13.00
1989	35.50	24.00	13.00
1990	32.00	22.00	12.00
1991	29.00	20.00	10.50

Source: Commission analysis of 1988 BMAD data, updated as described in the text.

Note: Charges are rounded to nearest 50 cents.

Computer interpretations of EKGs can help physicians be more efficient and accurate,[4] but at present they do not replace physician interpretation (Thomson 1989; Tonkin 1989).[5]

In Phase II of the Hsiao study, cardiologists and internists were surveyed for the professional work of EKG interpretation (CPT code 93010: interpretation only). The work required was estimated to be worth 17 relative value units.[6] It is not clear whether this value is accurate. The time estimates are too high for the average EKG, but the relative work value is consistent with those of similar services[7] and may be in correct relation to higher-valued services. Hsiao did not survey physicians specifically about interpreting EKGs in batches. Because this is a more efficient way to interpret EKGs, it is possible that batch interpretation would have a lower work value than single EKG interpretation. In addition, inpatient EKG interpretation almost always has the benefit of using the computerized interpretation as a starting point; the Hsiao EKG vignettes did not specify whether computerized interpretation was available. The Hsiao investigators have noted some of these concerns (Hsiao 1990).

Based on Commission simulations, the Medicare Fee Schedule payment for EKG interpretation will be slightly less than is now being paid.

Technical Component

The technical component of EKGs is considerably more overvalued than the professional component. The Medicare Fee Schedule payment for the technical component of EKGs is projected to be substantially less than the present mean allowed charge of $20.

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[4] Computers can speed up interpretation by providing accurate measurements of the rate, axis, and intervals. Moreover, an EKG read as normal by computers can be relied on as having no electrocardiographic abnormalities. Computers can potentially provide more reliable (reproducible) interpretations than do physicians. The most accurate interpretations can be achieved if the physician interacts with the computer, providing the computer with the clinician's estimate of the prior probability of disease and editing the computer's interpretation for comparison with later EKGs on the same patient.

[5] In addition, older or cheaper EKG machines do not have computer interpretation. Software programs for interpretation also are proprietary and may vary in quality by manufacturer and date of manufacture.

[6] In Phase II, cardiologists estimated EKG interpretation took 3.7 minutes and required 16 relative value units of work; internists estimated 5.4 minutes and 17 units. The Hsiao Phase I values of 7.6 minutes and 24 relative value units are probably not accurate. In Phase I the physicians were asked to rate the work of "[EKG] with interpretation in a 50-year-old man," so they may have erroneously included in their estimates the work of actually performing the EKG (the work of performing the EKG should not be included because physicians rarely do it). The Phase II vignette was better phrased, asking for the work of "interpretation and report only of a 12-lead EKG." Because the Phase II vignette was more specific and less susceptible to error, the Phase II value should be used for both CPT codes 93000 (complete) and 93010 (interpretation only).

[7] For example, the work of chest X-ray interpretation (CPT codes 71010 and 71020) was set at 19 relative value units, and urinalysis with microscopy at 13 relative value units.

Total Price

Overall, the price paid for a complete 12-lead EKG will decline significantly under the Medicare Fee Schedule. Most of the reduction is due to the lower payment for the technical component.

The overvaluation of EKG services will be corrected under the Medicare Fee Schedule. The most important remaining goal of EKG payment reform is to constrain overutilization while preserving appropriate use of EKGs.

ENSURING APPROPRIATE UTILIZATION

The OBRA90 EKG provision was in part a response to a perception that EKGs are overutilized. Two factors greatly affect appropriateness of EKG utilization: lack of knowledge of the medical indications for EKGs and payment-driven incentives for overutilization or underutilization. The Commission believes both must be addressed for EKGs to be utilized appropriately.

It is difficult to estimate how many unnecessary EKGs are performed, because presently there are few guidelines on appropriate use of EKGs (particularly outpatient EKGs) and the existing guidelines are largely permissive rather than restrictive (American Medical Association 1983; Goldberger 1986; American College of Cardiology/American Heart Association Task Force 1990).[8] While EKGs need not routinely be performed on admission to a hospital or before every operation, there is no consensus on when they should be performed (Goldberger 1986). Inpatient EKG use could be significantly reduced. In one university hospital study, EKG use declined by one-third after practice guidelines were developed internally for 14 common conditions (Wachtel 1990). It is likely that outpatient EKG use can be significantly curtailed as well.

Utilization is also affected by payment incentives. Only a resource-based price provides a neutral incentive for physicians to use EKGs versus providing other services. Paying nothing for EKG interpretation would encourage underutilization, and physicians who do not interpret electrocardiograms might obtain formal consultations simply for purposes of EKG interpretation.

The method of payment can also affect utilization. Three payment options have been suggested to try to curb inappropriate utilization:

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[8] The American College of Cardiology and the American Heart Association plan to issue jointly a set of practice guidelines in late 1991.

- Only necessary EKGs would be paid for as a separate service, using a coding mechanism that would distinguish necessary from unnecessary EKGs;

- No EKG interpretation would be paid for separately; payments for EKG interpretation would be bundled with payments for visits or diagnosis-related groups (DRGs) or both; and

- All EKG interpretation would be paid for as a separate service under the Medicare Fee Schedule at a resource-based price.[9]

Paying Only for Necessary EKGs As a Separate Service

Although the first option strives to achieve the right incentive by paying for appropriate EKGs and not unnecessary ones, it is not possible to distinguish necessary from unnecessary EKGs through coding rules. As a practical matter, given the lack of knowledge of appropriate indications for EKGs, it is impossible at present to define precisely the subset of necessary EKGs that should be recognized for payment.[10] One coding distinction that has been suggested is routine versus nonroutine, on the theory that many routine EKGs are unnecessary.[11] Even if routine and nonroutine could be accurately defined, however, not all routine EKGs are unnecessary and not all nonroutine EKGs are necessary.

A second problem in distinguishing necessary from unnecessary EKGs is that the distinctions are subject to "gaming." Patients' symptoms are often the indication for an EKG, and symptoms can be gamed. A clear distinction that would be less subject to gaming is by site of service, such as in the emergency department or intensive care unit. Not all EKGs even in these areas are necessary, however.

Bundling EKG Payment with Visits or Inpatient DRGs

The second option involves bundling the work of EKG interpretation with visits or DRGs. Bundling removes incentives for overutilization by severing the link between use and payment and can result in net savings to Medicare. At present, however, there is no equitable way to implement bundling with outpatient visits, and bundling with inpatient DRGs raises issues that need further study.

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[9] Section 4109 of OBRA90 does not provide a clear statement about the method to be used; the second option is most consistent with the language of OBRA90, but the first option is also being considered.

[10] If payment were to be restricted to necessary EKGs, payment for the technical component also should be denied for unnecessary EKGs. OBRA90 limits payment for the professional component only.

[11] Although OBRA90 does not specifically target routine EKGs, the Conference Report mentions "routine electrocardiogram interpretation covered by this provision . . . ."

Bundling EKGs with Visits. The Hsiao study work values for visits do not include the work of EKG interpretation. Bundling EKG interpretation with outpatient visits would require adding the work of EKG interpretation to the work of the visit to derive the relative work value for the bundled visit. If the work of EKG interpretation is not explicitly added to the work of the visit, then true bundling has not occurred. This would merely value the work of EKG interpretation at zero, thereby paying nothing for it. To be consistent with a resource-based fee schedule, the work value of EKG interpretation should be included in the payment for the visit.

Although the resource costs of an EKG should be used in calculating the new payment for a bundled visit, it is possible to limit total payments to an estimate of the number of necessary EKGs. Since an EKG is not done on every visit, payment for the fraction of an EKG that represents the appropriate frequency of performing EKGs relative to visits could be included in the payment for the bundled visit. Determining the appropriate frequency of EKGs would require the use of experts who would consult practice guidelines and research for guidance.

Although bundling EKG interpretation with visits could encourage more appropriate utilization and result in budget savings, it would create inequities among specialties and physicians because of differences in the average number of EKGs performed per visit (Table 13-3). For example, Medicare claims files show that cardiovascular physicians bill Medicare for more than four times as many EKGs per office visit as the average physician. Variations among individual physicians are even greater. These inequities cannot be corrected within the Medicare Fee Schedule because it permits neither specialty differentials nor payment by diagnosis.

The Commission is investigating the use of broader payment units, such as those based on the patient's condition. If diagnosis were taken into account, differences in case mix would not create inequities in payment among physicians and specialties. One disadvantage of the OBRA90 approach is that separate payment will still be made for the technical component. This will dilute the incentives achieved by bundling and obviate any administrative savings, since separate billing will still occur. Use of broader payment units based on diagnosis offers the possibility of equitably bundling the professional and technical components of laboratory and procedural services with visits.

Table 13-3. Specialty Differences in Office EKGs and EKGs per 100 Office Visits

Specialty[a]	Total Office EKGs (thousands)	Number of EKGs Per 100 Office Visits
Cardiovascular	2,089	37
Internal Medicine	4,840	13
Nephrology	63	10
Geriatrics	4	9
Clinic	688	9
Pulmonary	109	8
Gastroenterology	105	8
Family Practice	1,148	6
General Practice	841	5
General Surgery	114	0.2
Others	217	--
All Specialties Combined	10,218	8

Source: Commission analysis of 1988 BMAD data.

Note: [a]BMAD self-identified specialty designation.

Bundling EKG Interpretation with DRGs. The centralization of EKG interpretation within hospitals offers an opportunity to bundle payment with DRG payments to hospitals, which would then pay the physicians performing the interpretations. This would give hospitals a greater incentive (in addition to already absorbing the technical costs of EKGs) to ensure appropriate utilization of inpatient EKGs.

In contrast to outpatient bundling with visits, bundling inpatient EKG interpretation into DRGs could be accomplished without inequities among specialties or physicians. The reason for this is the principle behind all DRG payments. Since payments are made by diagnosis, on average the correct number of EKG interpretations will be paid for.

As with bundling of outpatient EKG interpretation, the payments for EKG interpretation must be explicitly added to DRG payments to be truly bundled; otherwise no payment would in fact be made. To determine the amount that would be added to payment for any given DRG, the number of EKGs on average that are (or should be)[12] performed for patients in that DRG would be determined. This number would be multiplied by the price set for interpreting an inpatient EKG. The result would then be added to the payment for that DRG.

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[12] Experts would need to determine the appropriate frequency of inpatient EKGs for each DRG.

Bundling EKG payments into DRGs seems consistent with a resource-based fee schedule and could be extended to other hospital-based services. This raises issues that are not confined to EKG interpretation or Medicare Part B. The Commission believes these issues need additional study.

Paying for All EKGs in the Medicare Fee Schedule at a Resource-Based Price

The final option--paying for all EKGs at a resource-based price--is consistent with the rest of the Medicare Fee Schedule. Only an accurate resource-based price is incentive-neutral with respect to providing other services. This hinges on determining the correct resource-based value. The Hsiao investigators and their Technical Consulting Group should carefully review the validity of the values for EKG interpretation and related services such as chest X-ray interpretation,[13] and they should determine whether batch-read EKG interpretation requires less work.

There are additional ways under the Medicare Fee Schedule to encourage appropriate utilization. The incentives created by the Volume Performance Standard apply to EKGs as well as all other services. The Commission believes that specialty-specific profiling of EKG utilization could be useful in identifying physicians or groups of physicians who are outliers and encouraging, and ultimately requiring, appropriate use.

BUDGET NEUTRALITY AND THE COMMISSION'S RECOMMENDATIONS FOR CHANGING THE OBRA90 METHOD OF PAYING FOR EKGs

The Congressional Budget Office (CBO) projected that the OBRA90 changes in payment for EKG interpretation would result in budget savings totaling $725 million from fiscal year 1992 through fiscal year 1995.[14] In practice, the savings will be achieved by calculating the estimated savings had the provision been in effect in 1991 and withholding that amount from the 1991 expenditure base used to calculate the conversion factor (OBRA90 Section 4109(b)). Based on CBO projections, the amount to be withheld from the 1991 base for calculating the conversion factor will be approximately $152 million. The rest of the budgeted savings will follow from this initial step as total expenditures for Medicare Part B increase yearly.

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[13] The Hsiao investigators have indicated that they plan to reassess the work values for diagnostic tests (Hsiao 1990).

[14] The CBO calculated this figure by projecting rates of growth in spending for EKG interpretation beginning with 1991 expenditures for EKGs, not taking into account Medicare Fee Schedule reductions in payment for EKGs. An 80 percent reduction was made in expenditures for EKG interpretation, with the resulting savings reduced in half by the behavioral offset.

Paying for all EKGs, even at the lower resource-based prices, will result in total expenditures for EKGs greater than those anticipated by OBRA90. Since the 1991 expenditure base cannot be changed without disturbing budget neutrality, the additional expenditures for EKGs would ordinarily come from reduced payments for other services. To avoid this, the transition to final fee schedule values should be accelerated for those procedures surveyed for the first time in Phase II of the Hsiao study that are considerably overvalued.

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CHAPTER 14

PRIVATE PAYERS AND THE MEDICARE FEE SCHEDULE

While the provisions of the Omnibus Budget Reconciliation Act of 1989 (OBRA89) that authorized payment on the basis of a resource-based fee schedule apply only to the Medicare program, the impact of these provisions on private payers has long been of interest to many.

Major Blue Cross-Blue Shield and commercial carriers and their associations have followed the developments in Medicare physician payment policy and are increasingly considering the implications for their private businesses. Their considerations have been wide ranging. To some, the focus has been on whether to emulate the restructuring of payment undertaken by Medicare. The question posed has been whether Medicare has developed a more appropriate pattern of relative payments and, if so, how it can best be applied to private payment.

To others, the focus has been more defensive. They have considered whether physicians will respond to the new configuration of payment by Medicare by raising charges to private patients or increasing the volume of service. Employers and unions, who pay most of the private insurance premiums, have focused heavily on this potential for cost shifting.

Federal policymakers are interested in the extent to which private payers emulate the Medicare Fee Schedule. The degree to which the goals behind payment reform are achieved is somewhat dependent on the degree to which private payment schedules are revised to be consistent with the Medicare Fee Schedule.

For example, one of the objectives of the payment reform is to change physician incentives concerning what services to provide, what specialty to train for, and in what geographic region to locate a practice. With Medicare accounting for about one-third of services in relevant specialties (Sunshine and Schwartzman 1989), changes in Medicare payment will provide significant financial incentives. But with some or all private payers restructuring payment in the same way, the incentives would be that much greater.

Another concern is beneficiary access to care. By basing payments on estimates of resource costs, access to appropriate care is likely to be maximized. But to the extent that private payers use substantially different relative values from Medicare, differences in payment for particular services in particular geographic areas could be quite large. While the resource-based approach is designed to ensure that the Medicare payment is adequate, for some services the private payment could be more than double the Medicare payment. This could lead some physicians to discriminate against Medicare patients. For other services, such as primary care, Medicare payments could become higher than private payments, leading some physicians to favor Medicare patients. While these differences in payment could balance in the aggregate, Medicare beneficiaries would likely have better access if the relationship between Medicare payment and private payment were more uniform.

The Commission has long been interested in the extent to which private payers would be inspired to change their policies in the directions outlined by the Medicare payment reform. In developing the specifics of its payment reform proposal to the Congress (PPRC 1989), attention was often given to making the fee schedule applicable to private payers that wanted to use it. When the Commission developed a reference fee schedule in 1989 on the basis of its evaluation and refinement of Phase I of the Hsiao study (this schedule was the basis for the "overvalued procedure" reductions in OBRA89), numerous copies were provided to private insurers that requested it. The Health Care Financing Administration's (HCFA) Model Fee Schedule, published in September 1990 (*Federal Register* 1990), has also been widely available and has been studied extensively by private insurers.

In OBRA90, the Congress indicated for the first time its concern for the relationship between Medicare physician payment policy and private payers. As part of a series of provisions that updated and expanded the Commission's mandate, the Congress directed the Commission to "make recommendations regarding options to help constrain the costs of health insurance to employers, including incentives under this title [Medicare]".

This chapter reflects the Commission's first efforts to respond to the OBRA90 mandate. It begins with a description of current plans by private payers to alter their payment policies on the basis of the Medicare payment reform. This description is based on interviews with officials at the Blue Cross-Blue Shield Association, the Health Insurance Association of America, and individual plans and companies. The chapter then describes potential public policies to coordinate rates of payment of public and private payers. It outlines how all-payer mechanisms could function and identifies the key policy issues that must be resolved if either the federal government or state governments are to pursue this course.

The chapter does not offer any recommendations. The Commission believes that extensive discussion among many parties is required before decisions concerning public policies toward private payment practices can be made, but little of this discussion has been conducted to date. To facilitate these discussions, it has prepared this overview of current practice and issues.

CURRENT PLANS BY PRIVATE PAYERS

Interviews with officials at Blue Cross-Blue Shield plans, commercial insurers, and health maintenance organizations (HMO) suggest that incorporating elements of the Medicare Fee Schedule into their payment policies is getting substantial attention by planning staffs. Payers are analyzing the patterns of differences between Medicare fees and their own fees once the Medicare schedule is implemented. The goal is both to predict responses by physicians that will affect the payer's outlays and to simulate the impact of possible revisions in relative values.

Insurers' interest in reflecting the Medicare physician payment reform in their own programs has a variety of motivations. To some, it reflects a desire to have a new product that will appeal to current and potential clients. To others, it reflects a defense against potential changes in physician behavior in response to the Medicare changes. To yet others, it reflects good citizenship.

Private payers are more interested in the relative value scale (RVS) than in other elements of the Medicare Fee Schedule such as the geographic adjustment factor (GAF) and the conversion factor. They recognize the enormous amount of research and oversight that have gone into developing the Medicare RVS. They support the notion of setting relative payments on the basis of data on relative costs, viewing it both as leading to more appropriate financial incentives to physicians and to more equitable payment. They also applaud breaking the link between what physicians charge in one year and the payment screens used in the following year.

The Medicare GAF and conversion factor are of less interest to private payers. These elements of the fee schedule suggest across-the-board increases or decreases in each market area. Payers question both the need for general increases in certain areas and their ability to put through general decreases in others.

The rest of this section is organized according to the relationship between payers and physicians. Traditional products of commercial insurers, which are referred to as indemnity plans, do not involve a contract between the insurer and the physician. The insurer decides how much to pay, and the beneficiary is responsible for any difference from what the physician charges (balance bill). By contrast, the participating physician programs of many Blue Shield plans and preferred provider organizations (PPO) of both commercial insurers and Blue Shield plans involve a contract under which the physician agrees not to balance bill the patient.

Indemnity Plans

While historically most indemnity plans used fee schedules, reasonable and customary payment is the norm today. Some insurers are developing a fee schedule based on the Medicare RVS to market to customers currently using an indemnity plan based on reasonable and customary charges. The conversion factor would differ from Medicare's. Indeed, one insurer plans to offer clients a range of conversion factors, so that the client can trade off premium versus balance billing levels. Officials at Prudential, which is developing such a plan, report many inquiries from existing indemnity customers.

Some payers are considering partial incorporation of the Medicare RVS through an additional charge screen under a reasonable charge system. This is analogous to the approach used by Medicare in OBRA89 and OBRA90. In both of these laws, data from a preliminary version of the Medicare Fee Schedule were used to reduce prevailing charge screens for overvalued procedures. In addition, primary care services received a larger fee update. Under this structure, insurers can decide the pace and extent to which the Medicare RVS is incorporated into their payment system and whether to use these data in a budget-neutral context or to raise or cut the overall level of payment.

The major barrier to incorporation of elements of the Medicare Fee Schedule into indemnity plans is balance billing. Balance billing is likely to increase for those services in which payments are reduced. In plans in which payments are low and balance billing is already extensive, insureds may find that increases in balance billing for surgery and technical procedures are offset by decreases for evaluation and management (EM) services and could be relatively indifferent to this. But in plans in which payment levels are high and balance billing is rare, the insureds might have a very negative reaction. The balance bills for procedural services that they encounter for the first time would not be offset by reductions in other areas. Insureds would likely interpret this increased balance billing as a reduction of insurance coverage.

Contracts with Physicians

In most Blue Cross-Blue Shield participating physician programs, other PPOs, and independent practice associations (IPAs), physicians agree to accept the insurer's fee as payment in full and, therefore, do not balance bill patients. In most of these contractual relationships, payment rates are determined by fee schedules that are tied to a reasonable charge mechanism or by reasonable and customary charges directly.

While a fee schedule based on the Medicare RVS could be used in place of the existing fee schedule, few of the officials interviewed were seriously considering such an approach. One plan anticipates a fee schedule based on the Medicare RVS in 1993. But others are instead planning to negotiate changes that reflect a partial movement toward the relative values in Medicare.

Blue Cross-Blue Shield of Oregon is pursuing such a strategy in its participating physician program. By comparing the relative values implied by its charge screens with the Medicare RVS, it developed an overvalued procedures list. Each of 144 services will have its charge screen reduced by one-third of the estimated difference, with a maximum reduction of 15 percent. The savings will be used to raise payments for EM services.

In other plans, the Medicare RVS is likely to become a reference point in negotiations with physicians. As one official pointed out, the Medicare Fee Schedule will function as a "published price list." Its presence will likely aid physicians whose practices emphasize EM services to argue for an increase in the relative values of those services.

In contrast to indemnity plans, where increases in balance billing for procedural services were the major obstacle to revising relative values, the willingness of physicians to agree to contracts that would lower their fees is the major obstacle for contract arrangements. Plans are concerned that sharp reductions in payments for procedures will make it difficult to attract sufficient numbers of physicians to provide adequate access.

The degree to which relative value changes can be incorporated will reflect physician supply in local markets and how much other payers have revised their payment structures. Private payers seem to be particularly concerned about being the first one to institute a resource-based fee schedule, even in areas where the physician supply is plentiful. They believe that if payments to procedure-oriented specialists are reduced by one private payer in an area where payments by other payers are more generous, the physician will not sign an agreement. But once payers accounting for a large share of the market have incorporated Medicare relative values, it will be easier to get physicians to agree.

Officials suggest that in shortage areas, and especially in rural areas, altering relative values will be most difficult. There may only be one specialist in the entire area, who may refuse to accept lower payments.

In summary, private payers generally support the objectives of the Medicare payment reform, but have yet to determine how far physician markets will permit them to go in changing relative values. The planning and technical work appear to be well under way, but the actual probing of how much change is acceptable to physicians or can be accomplished without compromising access lies ahead. Contracted arrangements have perhaps the most potential, both because they provide some market power to payers and because they lend themselves most readily to "testing the waters."

ALL-PAYER SYSTEMS

More extensive or more rapid changes by private payers would require public regulation of their payment policies. Under an all-payer system, an entity of government would determine the payment rates for various physician services. The rates used by different payers need not be the same, but the legislation authorizing the system would reflect a deliberate policy concerning how the rates would differ.

An all-payer system could pursue a number of goals. One is that the payment rate reflect a compromise that meets payers' needs for affordable health care and physicians' needs for fair return payment. Another is that the achievements of the Medicare payment reform in rationalizing incentives to physicians, increasing equity, and improving financial protection for patients be broadened through universal application. Still another is that differentials in rates among payers be rationalized. This will guarantee that individuals are not denied access to quality care because their payer has substantially lower rates compared with others.

Previous Experience

While discussion of all-payer systems in the United States has been limited, there is extensive experience with this type of regulation, especially outside this country. Indeed, among industrialized nations, these systems are the norm.

Since the early 1970s, a number of states have regulated hospital payment rates. Maryland, Massachusetts, New Jersey, and New York have covered all payers for an extended period of time.[1] While the research literature suggests significant cost-containment accomplishments by these state efforts, the practice has not spread extensively.[2] Florida, Connecticut, Maine, and West Virginia set hospital rates now, though probably without the same degree of success as the above-mentioned states. Washington, Wisconsin, and Illinois have discontinued earlier programs.

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[1] Each of the four states regulated Medicare rates for at least one part of the period under waiver from HCFA. After the implementation of the Medicare prospective payment system (PPS) in 1983 and 1984, however, some of the waivers were discontinued. New York decided to let its waiver lapse because it projected that its hospitals would receive higher Medicare revenues under PPS. Dropping the waivers was popular with hospitals, though the higher Medicare revenues may have permitted the state to set lower rates for other payers. HCFA did not renew waivers for Massachusetts and New Jersey because it calculated that Medicare outlays were higher under the waiver than under PPS. With either HCFA or the states able to terminate the waiver depending upon whether outlays would be higher or lower than under PPS, waivers are unlikely to last long. In the absence of a waiver, the Medicare rate is not coordinated with the rates set for other payers. But states are able to coordinate the regulated rates with what Medicare pays. In any case, hospitals face comparable incentives (prospective payment) from all payers.

[2] Studies published during the 1980s consistently demonstrated significant cost savings in these four states as a group (see, for example, Robinson and Luft 1988). Other states that have set rates for shorter periods of time have not had comparable success. Many researchers believe that success in cost containment depends mostly on the political will to set rates that are binding over a long period of time.

While all-payer systems of physician payment have not been used in the United States, there is extensive experience abroad. In Canada and in France, payment rates (fee schedules) are set by the single, public payer. Germany is the most relevant model because of its numerous private payers. Most of the population in Germany is insured by more than 1,000 private sickness funds. Negotiations at various levels between sickness funds and associations of physicians determine the various elements of fee schedules.

While the German federal government influences the overall parameters of these negotiations, such as setting a target for the percentage of wages that go for health insurance, it does not set fees. At the national level, a uniform relative value scale is negotiated between the association of sickness funds and its counterpart that represents physicians that serve the funds' beneficiaries. Conversion factors are negotiated at the local level.[3]

As in Germany, all-payer mechanisms in the United States could create forums for systemwide bargaining between providers, payers, governments, and other interested parties. This has recently begun in the Medicare program, where the mechanism of Volume Performance Standards provides both the fact base and the process by which the federal government, beneficiary organizations, and the medical profession negotiate what rate of expenditure increase is acceptable and the relationship between volume increases and fee changes. An all-payer mechanism would broaden such discussions to include the private payers and other parties.

The Fee Schedule

An all-payer system for physician services in the United States would involve Medicaid programs and private payers continuing to pay on a fee-for-service basis (except for contracts with HMOs based on capitation) but would use fee schedules that resembled that used by Medicare. The RVS would likely be identical for all payers.[4] So would the GAF. But conversion factors could differ by payer, at least during a transition phase.

Conversion factors would probably have to differ initially because current levels of payment differ so substantially among payers. Analysis presented in the Commission's 1990 annual report (PPRC 1990) showed that Medicare payment rates in 1987 were on average 80 percent of payment rates in Blue Cross-Blue Shield plans.[5] The percentage differed substantially by Blue plan. Recent Medicare budget cuts may have widened this differential (see Chapter 1). Analysis in this report (see Chapter 15) shows that Medicaid rates in 1989 averaged 69 percent of Medicare prevailing charges. This relationship varies dramatically by state.

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[3] See Appendix D for a brief description of physician payment in Germany.

[4] An all-payer system would likely alter some of the priorities for refinement of the Medicare RVS. For example, obtaining an accurate relative value for a global service for obstetrical care would take on a high priority.

A uniform conversion factor that left aggregate payments to physicians the same would probably require substantial increases in outlays by Medicare and state Medicaid programs. But tight federal and state budgets would make such an increase very difficult.

While the ultimate goal might be an identical fee schedule for Medicare, Medicaid, and all private payers, a transition would probably be required before this could be achieved. This transition could either be scheduled at the outset or a decision could be made each year on how much to narrow the differences in conversion factors.

From a technical perspective, development of a uniform payment schedule for physician services is likely to be easier than for hospital services. Hospital prospective payment originally began as a budget review process, which is highly demanding of technical staff on both the hospital and rate-setting side. While this has emphasized formulas more over time, with diagnosis-related groups (DRGs) increasing in popularity, it virtually always involves a change in the unit of payment--for example, from billed charges or cost reimbursement to a prospective per case payment. In the context of DRGs, extensive technical work has been required to develop distinct DRG conversion factors (called "weights" in the Medicare system) for non-Medicare patients, since lengths of stay differ substantially.

By contrast, a large proportion of physician payment is on a fee-for-service basis, which would continue. Some private payers and most Medicaid programs already use fee schedules to pay physicians. The conversion of reasonable charge systems to fee schedules, which Medicare is undergoing now, is not a huge endeavor.

Some adjustments for patient age could be required, however. For example, longer hospital lengths of stay for the elderly could mean that global relative values for certain surgeries would need to be higher for Medicare beneficiaries (due to more postoperative visits). A modifier for age could be applied to the relative value for selected surgeries.

The Hsiao study (Hsiao and others 1990) had an opportunity to analyze more generally whether physician work for a given service differs between elderly patients and others by creating additional vignettes that varied only by patient age. The approach was pursued for only three services, however. Further research on this issue would be useful to refine payment relationships between Medicare and other payers.

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[5] This analysis included both traditional Blue Cross-Blue Shield contracts and PPO contracts.

Limits on Charges

Perhaps the most controversial aspect of all-payer systems is limits on charges. In the debate over Medicare physician payment reform, most came to the conclusion that it made little sense to depart from historical charge relationships without limits on charges. Otherwise, many beneficiaries might have faced a pattern of balance billing reflecting differences between historical charges and resource costs. The same would apply to patients covered by private insurance. Without limits on charges, physicians might continue their historical patterns of charges and leave beneficiaries with balance bills for services with lowered payment rates.

Limits on charges could be approached in the same way as in the Medicare Fee Schedule; that is, setting them at a uniform percentage of the fee schedule amount. If all private payers in a geographic area used the same conversion factor, such limits would not be complex for physicians or patients. The limits could differ by payer. For example, balance billing could be prohibited for Medicaid patients, as it is today, and lower for Medicare patients than for privately insured or self-paying patients.

Physicians would likely be uneasy about a situation in which charge limits apply to all of their patient care. Their revenues would be heavily affected by the decisions on conversion factors made by a single governmental entity. The structure of that entity (discussed below) would likely be critical to the acceptability of all-payer systems to physicians.[6]

Volume Performance Standards

With the conversion factor of the Medicare Fee Schedule to be updated through Volume Performance Standards, the mechanism would need to be broadened to be applicable to other payers' conversion factors. Data limitations would pose some technical obstacles initially. In contrast to Medicare, data systems do not exist to monitor expenditures for physician services (or service volume) for those who are privately insured or uninsured. Such a reporting mechanism would probably take some time to develop and implement.

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[6] Balance billing has not been a controversial issue in hospital payment, probably because balance bills were relatively uncommon beforehand. From the inception of Medicare, hospitals have not been permitted to balance bill beneficiaries. When Blue Cross plans contract with hospitals to reimburse costs, the contract precludes balance bills. Finally, when insurers pay charges, most policies pay whatever the charges are (or a specified percentage of charges), so balance bills do not arise as an issue.

Once data problems are resolved, a single VPS that covered all payers could be used. On the basis of comparison of total expenditure growth with the performance standard, all conversion factors would be updated by the same percentage. Use of a single VPS to update the conversion factors would keep intact the incentives of individual payers to contain costs through mechanisms such as managed care, claims review, and wellness programs.

If the VPS mechanism were to be used prior to the development of a data base that reports expenditures by all payers on a timely basis, Medicare data could be employed as a proxy for patterns of expenditure and volume changes for the entire system. The assumption that trends in patterns of care to Medicare beneficiaries are similar to general trends could be examined through careful comparison of historical Medicare program data with national health expenditure data.[7]

Process of Setting Payment Rates

Whether an all-payer mechanism is acceptable to private payers, public payers, providers, and patients will depend on the nature of the process by which the critical decisions on the conversion factor are made. Such a mechanism requires that each of the parties affected by these decisions give up some autonomy concerning payment rates.

Physicians, who would be giving up some of their ability to set their fees and to balance bill, are concerned that the needs of governments to reduce their deficits would determine not only what public payer rates are, but what private payer rates are as well. Public payers, on the other hand, are reluctant to relinquish control over government spending to an entity that reflects private interests. Private payers are also concerned with the overall level of payment as well as with the difference in conversion factors between public and private payers. Their concern is the potential for government to solve its budget problems by paying at a lower rate than private payers.

The U.S. experience with hospital rate setting is instructive in pointing out how these competing concerns have been resolved. Maryland and Massachusetts created commissions to set hospital rates. By creating a commission outside of the line bureaucracy, decisions are not subject to the approval of the state's budget office. Provider interests can be incorporated through appointing commission members who are respected in the provider community. Procedural requirements also provide assurance that the policies laid out in the enabling legislation are adhered to.

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[7] Such comparisons are difficult because of very limited data on prices paid by non-Medicare patients. With more extensive contracting between payers and physicians, the physician fee component of the Consumer Price Index has become a poorer measure of prices actually received by physicians. Without an accurate series on prices paid, one cannot determine an accurate measure of trends in volume of services. Some private insurers have data on trends in the volume of services, however. Comparisons between Medicare data and a few private insurers might be more accurate than use of the national health expenditures data that are published annually by HCFA.

On the other hand, New York's Commissioner of Health sets hospital rates. Since the health department does not administer Medicaid (the social services department does), rates are not being set directly by the public payer. But the health department must deal with the state's budget officer. An interesting aspect of the New York structure is the heavy use of formulas in the authorizing legislation and the use of a neutral body to implement the formula. The legislation specifies that the trend factor (the general rate update) reflect inflation in input prices experienced by hospitals and that a panel of economists be appointed by the Commissioner of Health to determine the methodology for calculating this trend factor. The panel's decisions are not subject to review by any executive branch official.

An all-payer mechanism for physician services could be administered at the state or national level. Two issues must be addressed if a state-level mechanism is to be considered. First, would the federal government be willing to cede substantial control over the Medicare budget to 50 state entities? With the answer "probably not," one needs to consider the feasibility of the federal government determining the Medicare payment and the state entity determining the payment for Medicaid and the private payers. This split has functioned for hospital payment for a number of years and the experience should be studied. Private payers may have concerns that such an arrangement would permit the federal government to set very low rates for Medicare and leave the state with no choice but to set higher rates for private payers.

The second issue is the basic one of centralization versus decentralization. Presumably state entities could better reflect the varying attitudes of the public, business and labor, and the physicians in different parts of the country. State entities would provide a laboratory to experiment with variation in policies. On the other hand, making decisions 50 times would require much more resources on the part of both governments and the private parties with interests in the process.

Concerning this last point, attention needs to be given to keeping the process simple. A national relative value scale would remove much of the technical responsibility from states. This way, the state entities would only have to decide on the conversion factors for each class of payers. This resembles the approach used in Germany, where the relative value scale is negotiated between national associations of sickness funds and physicians while conversion factors are negotiated at the local level.

A federal entity could set rates and charge limits for all payers. Consideration would need to be given to how to reflect the interests of payers, patients, and providers. One alternative would be the existing mechanism used for Medicare Volume Performance Standards, whereby the Congress makes annual decisions on the basis of advice from the

Secretary of Health and Human Services (HHS) and the Commission. Alternatively, the Secretary could make the decision. It would be reviewed by the Congress, which would be advised by the Commission.[8]

Another federal alternative would involve creation of a commission in the Executive Branch outside of HHS. The commission members would be appointed by the President subject to confirmation by the Senate. Such a structure is used to regulate rates for pipeline transportation of natural gas (Federal Energy Regulatory Commission). But the legality of having an entity outside of the control of the Office of Management and Budget regulate a price that determines federal outlays would need to be explored.

Under either federal or state-level decisions, the government could establish maximum limits on charges and allow each private payer to determine its own conversion factor within a specified range. Consider a hypothetical service that is paid $100 under the Medicare Fee Schedule. The charge limit for Medicare beneficiaries would be $115 after 1992. The federal government could then specify a charge limit for private payers of $140 and permit each private payer to choose a conversion factor that would result in a payment ranging from $100 to $140.

All-Payer Mechanisms and Competitive Health Plans

Would an all-payer mechanism be compatible with competitive health plans, such as HMOs and PPOs? This is a key issue for some, especially in the business community and the labor movement. This issue determines whether establishing such a mechanism commits the nation to organizing its health system without a major role for competitive plans or leaves open the potential for competitive plans to become more important. While the answer to this question will depend in part on the details of any all-payer mechanism, it appears at this point that such mechanisms would be compatible with growth in the role of competitive health plans.

All-payer mechanisms would not interfere with efforts of competitive health plans to contain costs through managing the delivery of care more effectively. Activities such as utilization review, profiling, claims review, selecting efficient physicians for a network, and so forth would not be affected by a public body setting fees or charge limits. To the extent that activities to control the volume of services and deliver services more efficiently are the essence of competitive health plans, their potential would not be affected.

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[8] The original expenditure target legislation reported by the Ways and Means Committee included such a process. The American Medical Association pressed to have the authority removed from HHS. The conference agreement provided for Congress to make these decisions and wrote a default formula for instances in which the Congress does not act.

Policy decisions concerning the design of all-payer mechanisms will affect the degree to which competitive plans can rely on either discounting or selecting lower-priced physicians to keep their costs down. If the fee schedule is only a ceiling, competitive plans would continue to be free to negotiate a lower conversion factor or less balance billing with selected physicians.

Many proponents of all-payer mechanisms would preclude competitive plans from contracting with physicians to pay lower rates. Such arguments have often been in the context of hospital payment, but may also apply to physician payment. The rationale is that by allowing those with market power to obtain discounts, those without market power would wind up paying more.

Those setting rates that apply to virtually all of the sources of revenue of providers have responsibilities to providers that revenues will be adequate, as well as to payers that health care will be affordable. For example, hospital rates need to be high enough so that efficient hospitals can cover their costs. If some payers obtain a substantial discount, this might mean that the all-payer rates need to be that much higher to enable providers to obtain adequate revenue. In the context of rate setting, discounting encompasses more transfers among payers (cost shifting) and from providers to payers. The social basis for these transfers among payers is questionable.

One issue that would need to be resolved concerns payments from HMOs to physicians when mechanisms other than fee for service are used. It should be clear that capitation, per se, is not incompatible with all-payer mechanisms. There is little reason to be concerned with salary relationships between HMOs and staff physicians or any other relationships between HMOs and physicians who limit their practice to patients of a single HMO. These will be influenced by the fee schedule through physicians knowing how much they could earn in fee-for-service practice. Capitation arrangements between HMOs and physicians who do not practice exclusively with a single HMO could lead to an evasion of the fee schedule. But the consequences of this seem much smaller than the disruption from an attempt to regulate such relationships to ensure that they are consistent with the fee schedule.

The hospital payment experience demonstrates a variety of attitudes toward HMO contracts with hospitals at discounts. It provides a laboratory to examine the relationship between prohibitions on discounting and the role of HMOs in the health care system, but other factors need to be held constant. Most difficult for researchers would be a correlation between restrictions on HMO discounts and other state policies that are less than hospitable to HMOs. Nevertheless, the fact that Massachusetts is distinguished by both extensive hospital rate regulation and high HMO market share argues against the potential for any all-payer system to stifle competitive plans.[9] After a slow start, Maryland and New Jersey now have extensive HMO activity as well.

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[9] Massachusetts does permit discounted hospital rates to HMOs.

CHAPTER 15

PHYSICIAN PAYMENT UNDER MEDICAID: CURRENT PATTERNS

The Omnibus Budget Reconciliation Act of 1989 (OBRA89) directs the Commission to examine the adequacy of physician payment under Medicaid. This chapter presents information the Commission collected in its survey of state Medicaid programs on Medicaid physician fees, payment methods, and physician participation. Chapter 16 discusses the Medicaid physician payment reform options the Commission is considering. The final results of the study and recommendations will be submitted to the Congress by July 1, 1991.

THE COMMISSION'S SURVEY OF STATE MEDICAID PROGRAMS

In its 1990 report, the Commission noted that no consistent and complete data were available on Medicaid physician payment methodologies and fees across states. To develop such information, the Commission contracted with the National Governors' Association (NGA) to conduct a survey of state Medicaid programs. The survey, fielded in 1990, collected information from state Medicaid officials on the physician payment methodology used, the frequency of payment updates, and problems related to physician participation. It also gathered data on actual fee levels in each state for 23 of the most common services used by Medicaid beneficiaries.[1] The discussion in this chapter is divided into two parts. The first considers the context of physician payment policies and recent initiatives states have taken to improve both physician participation and beneficiary access. The second provides an analysis of data on fee levels.

The Context of Medicaid Physician Payment Policies

While the Commission was particularly interested in collecting information on fee levels, it also used the survey to learn about other factors that affect Medicaid payments and beneficiary access to care. Understanding how states determine fees, how frequently they

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[1] The survey included fifty states and the District of Columbia. Except for Wyoming, all responded. Some states, however, were unable to respond to each item on the survey.

Payment Methodology. Most states use one of two methods in determining physician payments under fee-for-service arrangements: fee schedules or reasonable charges (Table 15-1). Fee schedules are becoming the dominant methodology, however, with the number of states using them increasing from 31 in 1986 to 42 in 1990.[2] These schedules may reflect a previous year's charge data, be based on relative value scales, or be drawn from other payers' data. Fourteen states expressed interest in using the relative value scale from the Medicare Fee Schedule for physician payment in their programs. Only Maine, however, has implemented a resource-based fee schedule.

Of the nine states that do not use fee schedules, eight use reasonable charges as the basis for physician payment. Arizona, which operates its Medicaid program on a demonstration basis under a special waiver from the Health Care Financing Administration (HCFA), negotiates payment rates with physician groups.

In most states, charge profiles or fee schedules are statewide and apply to all physicians participating in the Medicaid program regardless of specialty. Just three states (Alaska, Nebraska, and Texas) pay different rates in different geographic areas; only eight states (including Alaska and Nebraska) vary payment rates according to physician specialty.

Payment Updates. States were also asked to report their most recent updates in physician fees (Table 15-2). Although 35 states increased physician fees within the past two years, only 21 have increased fees for all physicians' services. Of the states that have not increased fees across-the-board, eight increased fees for maternity services and four raised fees for pediatric services. This targeting of fee increases closely follows recent state and federal initiatives to broaden eligibility and service coverage for pregnant women and children.[3]

Physician Participation. Medicaid directors were asked whether low physician participation was a problem in their program and to identify areas of low physician participation by both geographic area and specialty. A total of 44 states identified participation problems, and more than half (27) identified problems with both geographic and specialty distribution of participating physicians (Table 15-3). Six states (Alaska, New Mexico, North and South Dakota, Oklahoma, and Tennessee) reported no problems with physician participation.

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[2] The state Medicaid plan in most of these states indicates that the payment is the lower of the submitted charge or the fee schedule amount. Because Medicaid fees are so low relative to other payers, it seems likely that submitted charges are rarely lower than the fee schedule amount.

[3] More attention may be given to fees for obstetric and pediatric services in the future under a provision of OBRA89 that requires states to submit annual plans to HCFA specifying fees for these services. These fees will be reviewed to determine whether they meet the federal requirement of being sufficient to ensure that access to covered services for Medicaid beneficiaries is comparable to access for the general population.

Table 15-1. Medicaid Physician Payment Methodologies, 1989

State	Payment Methodology	Fee Schedule Source and Base Year
AL	Fee Schedule	90 percent of 75th percentile of submitted charges, 1981
AK	Reasonable Charges	
AZ	Negotiated Rate	
AR	Fee Schedule	Charges
CA	Fee Schedule	1969 and 1974 California Relative Value Studies
CO	Fee Schedule	1976 Colorado Relative Value Study
CT	Fee Schedule	Charges
DE	Fee Schedule	Charges
DC	Fee Schedule	Charges
FL	Fee Schedule	
GA	Fee Schedule	Charges
HI	Reasonable Charges	
ID	Fee Schedule	1974 California Relative Value Study
IL	Fee Schedule	Charges
IN	Reasonable Charges	
IA	Fee Schedule	Charges
KS	Fee Schedule	1974 California Relative Value Study
KY	Reasonable Charges	
LA	Fee Schedule	Charges
ME	Fee Schedule	1974 California Relative Value Study
MD	Fee Schedule	1974 California Relative Value Study
MA	Fee Schedule	
MI	Fee Schedule	Michigan Relative Value Study, Medicare prevailing charges
MN	Fee Schedule	Charges
MS	Fee Schedule	1964 California Relative Value Study
MO	Fee Schedule	Charges
MT	Fee Schedule	Charges
NE	Fee Schedule	
NV	Fee Schedule	1974 California Relative Value Study
NH	Reasonable Charges	
NJ	Fee Schedule	Charges, 1973 New Jersey Blue Shield 500 Plan
NM	Fee Schedule	1986 Colorado Relative Value Study
NY	Fee Schedule	1965 New York Medical Society Relative Value Study
NC	Fee Schedule	Charges
ND	Fee Schedule	Charges
OH	Fee Schedule	Charges
OK	Fee Schedule	Lower of 75th percentile of Medicare and Medicaid charges, 1986
OR	Fee Schedule	
PA	Fee Schedule	Charges
RI	Fee Schedule	1967 Rhode Island Medical Society Negotiated Rates
SC	Fee Schedule	1974 California Relative Value Study
SD	Fee Schedule	Charges
TN	Reasonable Charges	Percentage of usual, customary or prevailing charges
TX	Reasonable Charges	
UT	Fee Schedule	Utah Medical Association Relative Value Study
VT	Fee Schedule	1988 McGraw-Hill Relative Value Scale
VA	Fee Schedule	15th percentile of charges
WA	Fee Schedule	1974 California Relative Value Study
WV	Fee Schedule	
WI	Fee Schedule	Charges
WY	Reasonable Charges	

Source: National Governors' Association and Physician Payment Review Commission, 1990.

Table 15-2. Date of Last Update in Medicaid Physician Fees by Category of Service

State	All Fees	Primary Care	Maternity Services	Pediatric Services
AL	Oct-81	Oct-81	Oct-89	Oct-89
AK	Apr-85	Apr-85	Apr-85	Apr-85
AZ	Oct-88	Oct-88	Oct-88	Oct-88
AR	May-86	May-86	May-86	May-86
CA	Aug-85	Aug-85	Nov-89	May-88
CO	Jul-89	Jul-89	Jul-89	Jul-89
CT	Jul-89	Jul-89	Jul-89	Jul-89
DE	1985	1985	Jul-88	1985
DC	1985	1985	Apr-90	1985
FL	Jul-78	Oct-87	Oct-87	Oct-87
GA	Jan-89	Jan-89	Jan-89	Jan-89
HI	Jul-88	Jul-88	Jul-88	Jul-88
ID	Jul-89	Jul-89	Apr-90	Jul-89
IL	Sep-89	Sep-89	Sep-89	Sep-89
IN	N/A	N/A	N/A	N/A
IA	Jul-89	Jul-89	Jul-89	Jul-89
KS	Jul-78	Jul-85	Jul-87	Jul-78
KY	Aug-81	Aug-81	Nov-87	Aug-81
LA	Feb-87	Apr-89	Apr-89	Apr-89
ME	N/A	Jul-88	Jul-88	Jul-88
MD	N/A	Jan-89	Jul-88	Jan-89
MA	Sep-89	Sep-89	Sep-89	Sep-89
MI	Feb-89	Feb-89	Feb-89	Feb-89
MN	Nov-85	Nov-85	Nov-85	Nov-85
MS	Jul-83	Jul-89	Oct-87	Jun-88
MO	Pre 79	Dec-82	Jul-87	Pre 79
MT	Jul-89	Jul-89	Apr-90	Jul-89
NE	Oct-85	Oct-85	Oct-85	Oct-85
NV	N/A	N/A	Apr-88	N/A
NH	N/A	Aug-88	Jul-89	Aug-88
NJ	N/A	May-89	May-89	May-89
NM	Oct-87	Oct-87	Oct-87	Oct-87
NY	Apr-74	Jan-85	Jan-88	Jan-85
NC	Jan-90	Jan-90	Oct-89	Jan-90
ND	Jul-80	Jul-80	Jul-80	Jul-80
OH	Apr-89	Apr-89	Apr-89	Apr-89
OK	Apr-86	Apr-86	Apr-86	Apr-86
OR	Jul-89	Jul-89	Jul-89	Jul-89
PA	Jul-85	Apr-88	Apr-90	Apr-85
RI	Apr-87	Apr-87	Apr-87	Apr-87
SC	Jul-89	Jul-89	Jul-89	Jul-89
SD	Jul-89	Jul-89	Jul-89	Jul-89
TN	Oct-86	May-87	May-87	May-87
TX	Mar-89	Mar-89	Mar-89	Mar-89
UT	Mar-87	Aug-87	Mar-88	Mar-87
VT	Dec-88	Dec-88	Jul-89	Jul-89
VA	Jan-90	Jan-90	Jan-90	Jan-90
WA	Sep-88	Jan-90	Aug-89	Jan-90
WV	Nov-81	Nov-81	Jul-87	Nov-81
WI	Jul-89	Jul-89	Jul-89	Jul-89
WY	N/A	N/A	N/A	N/A

Source: National Governors' Association and Physician Payment Review Commission, 1990.

N/A = Not Available.

Table 15-3. Problems with Physician Participation

State	Geographic Areas With Low Physician Participation	Specialties With Low Physician Participation
AL		Ob/Gyn and Pediatrics
AZ	Rural Areas	
AR	Rural Areas	Ob/Gyn
CA	Rural Areas	Ob/Gyn
CO	Rural Areas	Ob/Gyn and Pediatrics
CT	North and South Central Regions	General Practice and Pediatrics
DE	Rural Areas	Ob/Gyn and Pediatrics
DC	Southeast Section	Ob/Gyn and Dentistry
FL	Rural Areas	Allergy, Gerontology, Pathology, Child Psychiatry and Rheumatology
GA		Ob/Gyn
HI	Rural Areas	Ob/Gyn and Orthopedics
ID		Ob/Gyn
IL	Rural and Southern Regions	Ob/Gyn
IN	Rural Areas	Ob/Gyn
IA		Ob/Gyn
KS		Ob/Gyn
KY	Rural Areas	Ob/Gyn and Pediatrics
LA		Ob/Gyn and Pediatrics
ME	Urban Areas	Ob/Gyn and Pediatrics
MD	Rural and Affluent Areas	Psychiatry
MA	Areas with Lowest Per Capita Income	General and Family Practice
MI	Rural Areas	Ob/Gyn, Neurosurgery and Orthopedic Surgery
MN	Rural Areas	
MS	Coastal Areas	All Specialties
MO	Southeast and Northwest Areas	Ob/Gyn
MT	Rural Areas	Ob/Gyn and Family Practice
NE	Rural and Urban Areas	Ob/Gyn and Primary Care
NV	Rural Areas	Ob/Gyn, Pediatrics, Dentistry
NH		Dentistry and Podiatry
NJ	Rural and Inner City Areas	Ob/Gyn, Orthopedic Surgery, Pediatrics
NY		Ob/Gyn and Pediatrics
NC	Rural Areas	
OR	Rural Areas	Ob/Gyn
PA	Rural Areas	Ob/Gyn
RI		Ob/Gyn
SC	Rural Areas	
TX	Rural Areas	Ob/Gyn, Pediatrics and Family Practice
UT	Orem and Provo, Rural Areas	
VT		Ob/Gyn
VA	Rural Areas	Ob/Gyn
WA	Rural and Urban Areas	Ob/Gyn and Pediatrics
WV		Specialists
WI	Rural Areas	Ob/Gyn

Source: National Governors' Association and Physician Payment Review Commission, 1990.

Note: Ohio noted problems with low physician participation but did not indicate particular geographic areas or specialties.

Difficulty recruiting practitioners in rural areas was reported by 23 states. This suggests that the barriers rural residents face in gaining access to medical care services may be particularly acute for rural residents whose care is paid for by Medicaid (see Chapter 17). Four states (Maine, Nebraska, New Jersey, and Washington) and the District of Columbia identified problems in urban areas; five other states (Connecticut, Illinois, Mississippi, Missouri, and Utah) identified specific regions within the state where provider participation is a problem.

The lack of obstetricians willing to serve Medicaid patients was noted as problematic by 31 states. Retaining and recruiting pediatricians were cited as problems by 12 states. Mississippi reported problems with physician participation across all specialties.

Medicaid directors were also asked to rank seven selected factors according to how important each was in discouraging physician participation in the Medicaid program (Table 15-4). Thirty states ranked low fees as the primary reason for low participation. The high cost of malpractice insurance premiums was the second most important reason. The threat of a malpractice suit, however, was judged the least important in participation decisions; 33 states ranked this factor sixth or seventh.

Extent of Medicaid Caseload. Physician participation statistics can obscure important differences between physicians who treat a few Medicaid patients and those with substantial Medicaid caseloads. This is because HCFA defines participating physicians as those who submit at least one Medicaid claim annually. Interpretation of participation statistics is further complicated because some states count group practices as a single provider.

The survey asked states to identify the distribution of participating physicians by the amounts billed to Medicaid (Table 15-5). Across the 23 states that were able to provide this information, 62 percent of physicians, on average, billed Medicaid less than $5,000 in 1989. An average of 75 percent of physicians participating in these Medicaid programs billed less than $10,000. This suggests that Medicaid may be only a marginal source of revenue to most physicians.

State Initiatives to Improve Physician Participation. In addition to fee increases, states have taken a number of steps over the past few years to improve physician participation. Most states (31) reported implementing electronic claims submission to simplify billing and speed payment to physicians. Other methods established by 17 states include toll-free hot lines to answer physician questions, simplified billing forms, and expanded public relations efforts to recruit and retain participating physicians. Several states (including Alabama, Colorado, Iowa, and Louisiana) have established formal liaison committees with state medical societies. Others (including Michigan and Missouri) have given physicians quick access to eligibility information via computer.

Table 15-4. Ranking of Reasons for Low Physician Participation

Reason	Most Important (Rank 1-2)	Moderately Important (Rank 3-5)	Least Important (Rank 6-7)
		(Number of States)	
Malpractice premiums	20	23	4
Patient compliance	10	27	10
Low fees	38	9	1
Payment delays	6	29	11
Clients sue frequently	2	10	33
Complex billing procedures	14	24	9
Disruptive clients	5	18	23

Source: National Governors' Association and Physician Payment Review Commission, 1990.

Note: States were asked to rank reasons from 1 to 7 with 1 being most important and 7 being least important. Not all states included all seven reasons in their rankings. Totals add to more than 51 for each column because of grouped rankings.

Table 15-5. Distribution of Participating Physicians by Annual Medicaid Billings, 1989

State	$1-$1,000	$1,001-$5,000	$5,001-$10,000	$10,001-$25,000	$25,000-$50,000	$50,001-$75,000	Over $75,000
				(Percent of Participating Physicians)			
AK	21	17	9	17	18	10	9
AR	33	15	19	19	8	3	3
CA	21	21	12	16	12	5	12
CO	29	39	16	11	3	1	1
DE	29	34	17	14	4	1	1
GA	24	22	14	20	11	4	6
IL	38	26	12	14	6	2	2
KS	48	26	10	10	4	1	0
KY	35	22	12	17	8	3	4
LA	25	23	12	22	8	3	5
ME	29	25	15	14	7	2	0
MD	41	25	13	8	12	0	0
MI	29	27	16	18	7	2	2
MS	59	31	7	3	0	0	0
MO	43	29	12	10	4	1	1
NE	38	21	12	14	8	3	2
NJ	46	31	10	7	2	1	1
NY	61	21	7	6	3	0	2
NC	30	30	14	16	6	2	2
ND	43	23	11	12	4	3	3
RI	33	43	15	6	2	0	0
TX	29	30	15	15	6	2	3
WA	32	24	14	17	7	3	5

Source: National Governors' Association and Physician Payment Review Commission, 1990.

Note: Totals may not add to 100 percent due to rounding. New York data reflects 10/1/87 - 9/30/88.

Medicaid Physician Fees

The second section of the survey focused on obtaining detailed information on fee levels for 23 services. Previously, fee information was available across states for only three services: brief follow-up office visits, appendectomies, and deliveries (HHS 1987). The Commission's survey targeted high volume services of several types: office visits, hospital visits, diagnostic procedures, surgical procedures, and maternity services. To ensure accuracy, each state was given an opportunity to check and validate its reported fees.[4]

These data show wide variations in Medicaid physician fees across states and in the levels of Medicaid fees relative to those of other payers. The data also confirm earlier analyses indicating that Medicaid pays physicians considerably less than Medicare or private payers. In addition, the survey data suggest that Medicaid programs pay less than the new resource-based Medicare Fee Schedule would have paid, had it been implemented at the time of the Commission's survey.

Variation in Medicaid Payments. Variations in Medicaid physician payments across states are important to policymakers because they may influence differences in access to care for Medicaid beneficiaries. Federal statute requires only that state Medicaid programs set physician fees that are sufficiently high to ensure reasonable access to care. Broad state discretion in setting those fees has resulted in wide variations in fee levels. Analysis of the 1986 HCFA survey of Medicaid fees indicated more than fourfold differences between the highest and lowest Medicaid fees for brief office visits and appendectomies (U.S. Congress 1988).

The more recent survey conducted by the Commission and the NGA indicates that there are very large differences (from threefold to fifteenfold) between the highest and lowest Medicaid physician fees for all services except deliveries (Table 15-6). Payments for hospital and emergency room visits vary most widely; maternity services exhibit the narrowest range of payment levels. The narrower range for delivery services may reflect the recent efforts of federal and state policymakers to increase Medicaid beneficiaries' access to obstetrical care by broadening eligibility rules for low-income pregnant women and raising fees for these services.

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[4] Portions of the analysis presented here are based on different subsets of 21 fees due to their analytical saliency. Two of the services -- prenatal and postpartum office visits -- are not considered in this analysis because the bundle of services included within the procedure code varied widely across states.

Table 15-6. Distribution of Medicaid Fees by Service, SFY1989

		Range	
	Minimum	Median	Maximum
Comprehensive Office Visit, New Patient	$10	$44	$104
Limited Office Visit, Established Patient	10	17	39
Intermediate Office Visit, Established Patient	10	20	45
Intermediate Emergency Room Visit	8	25	118
Comprehensive Consultation, Initial	20	60	146
EPSDT Screening and Diagnostic Services[a]	14	34	95
Psychotherapy, 45 to 50 minutes	18	42	86
Comprehensive Hospital Visit, Initial	10	51	150
Intermediate Hospital Visit, Subsequent	6	20	70
Total Obstetric Care, Vaginal Delivery[b]	344	738	1316
Total Obstetric Care, Cesarean Delivery	453	903	1605
Vaginal Delivery	200	440	901
Cesarean Delivery	360	638	1231
Tonsillectomy and Adenoidectomy, under 12 years	60	164	475
Repair Inguinal Hernia, under 5 years	140	312	1016
Total Hysterectomy	166	614	1770
Cataract Removal	404	990	2915
Routine Electrocardiogram	10	23	55
Chest X-Ray, Two Views, Professional Component	5	10	21
Chest X-Ray, Two Views, Global Service	10	23	55
Endoscopy, Upper GI	80	205	411

Source: National Governors' Association and Physician Payment Review Commission, 1990.

[a] Early and Periodic Screening, Diagnosis and Treatment (EPSDT) services must be offered by all state Medicaid programs. They consist of services to determine physical or mental defects in children, and treatment to correct or ameliorate any defects or chronic conditions found.

[b] Total obstetric care generally includes prenatal services, delivery and postpartum hospital and office visits.

Note: SFY89 refers to state fiscal year 1989.

The Medicaid fees for five services--intermediate follow-up office visit, intermediate follow-up hospital visit, routine electrocardiogram (EKG), total hysterectomy, and vaginal delivery--provide a snapshot of the variation in fee levels across the states (Tables 15-7 through 15-11). Intermediate office visits range from $10 in West Virginia to $45 in Alaska. Intermediate hospital visits range from $6 in New York to $70 in Nebraska. Routine EKGs range from $10 in Florida to $55 in Alaska. Total hysterectomies range from $166 in Kentucky to $1,770 in Alaska. Vaginal delivery ranges from $200 in South Dakota to $901 in Georgia.

To provide a more comprehensive measure of the differences in physician fee levels across states, an index that measures relative Medicaid fee levels for a bundle of services was developed (Table 15-12).[5] The index indicates the degree of variation in physician fee levels across states. Alaska, Georgia, Indiana, and Nevada all have Medicaid fees that are at least 150 percent of the average fee across all states for the bundle of services. New Jersey and New York have fee levels that are about half the average level.

Differences in the costs of practice explain little of the variation in fee levels across states. To examine this question, Medicaid fees were deflated by a geographic practice cost index (Welch and others 1989); the fee index was recalculated on the deflated fees. Although there is some small reduction in variation for the deflated fees (as measured by the coefficient of variation),[6] most of the variation remains. The coefficient of variation for the original index is 33, compared with the coefficient of variation for the deflated fee index of 30. The remaining variation in Medicaid physician fees may reflect both differences in the market for physician services and deliberate policy decisions made by states. Among these are trade-offs between payment levels for various services, the number of optional services covered, and breadth of eligibility.

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[5] Physician fees from the survey were bundled into nine service types: office and other non-hospital visits, hospital visits, emergency room visits, consultations, X-ray services, electrocardiogram services, psychiatric services, obstetrical services, and surgical and other procedures. The fees for each type of service were then combined in proportion to their Medicaid utilization to create a typical Medicaid fee for each state. The index value is each state's typical fee divided by the nationwide average.

[6] The coefficient of variation (CV) for a given distribution is defined by the standard deviation divided by the mean multiplied by 100. The statistic summarizes the variability of Medicaid fees across states: the greater the variation, the greater will be the CV.

Table 15-7. Medicaid Fees (SFY89) and Medicare Prevailing Charges (1988), Intermediate Office Visit, Established Patient (CPT 90060)

State	Medicaid	Medicare Prevailing Charge	Medicaid as percent of Medicare Prevailing Charge
Alabama	$22.50	$26.25	86
Alaska	45.00	43.37	104
Arkansas	24.75	21.19	117
California	18.40	36.43	51
Colorado	24.40	23.15	105
Connecticut	19.50	33.65	58
Delaware	17.94	41.58	43
District of Columbia	20.00	41.76	48
Florida	25.00	34.66	72
Georgia	25.00	22.62	111
Hawaii	22.40	35.22	64
Idaho	19.50	24.27	80
Illinois	12.65	27.62	46
Indiana	26.80	22.74	118
Iowa	19.84	21.19	94
Kansas	25.00	27.31	92
Kentucky	17.77	24.61	72
Louisiana	14.28	23.46	61
Maine	21.25	25.02	85
Maryland	21.00	27.08	78
Massachusetts	41.00	41.21	99
Michigan	16.60	25.73	65
Minnesota	20.00	26.20	76
Mississippi	15.00	15.69	96
Missouri	17.00	22.44	76
Montana	18.84	26.46	71
Nebraska	17.70	20.57	86
Nevada	29.38	34.04	86
New Hampshire	20.00	27.32	73
New Jersey	14.00	28.22	50
New Mexico	20.31	25.96	78
New York	11.00	31.68	35
North Carolina	21.88	22.22	98
North Dakota	16.70	23.10	72
Ohio	18.91	23.36	81
Oklahoma	17.50	26.91	65
Oregon	18.81	31.42	60
Pennsylvania	18.00	28.70	63
Rhode Island	18.00	32.14	56
South Carolina	18.00	24.24	74
South Dakota	18.00	20.25	89
Tennessee	27.00	21.83	124
Texas	19.50	22.89	85
Utah	19.65	20.32	97
Vermont	21.00	29.69	71
Virginia	19.00	25.98	73
Washington	22.62	27.25	83
West Virginia	10.00	22.94	44
Wisconsin	16.88	26.00	65

Source: National Governors' Association and Physician Payment Review Commission, 1990; Health Care Financing Administration, BMAD, 1988.

Note: SFY89 refers to state fiscal year 1989.

Table 15-8. Medicaid Fees (SFY89) and Medicare Prevailing Charges (1988), Subsequent Hospital Visit, Intermediate Service (CPT 90260)

State	Medicaid	Medicare Prevailing Charge	Medicaid as percent of Medicare Prevailing Charge
Alabama	$19.80	$28.57	69
Alaska	59.00	57.97	102
Arkansas	30.75	30.70	100
California	27.60	39.60	70
Colorado	24.40	22.54	108
Connecticut	22.00	33.63	65
Delaware	23.74	37.74	63
District of Columbia	18.00	37.86	48
Florida	32.00	44.42	72
Georgia	35.00	29.14	120
Hawaii	35.80	48.19	74
Idaho	19.50	29.93	65
Illinois	12.60	38.33	33
Indiana	26.70	27.41	97
Iowa	20.41	28.54	72
Kansas	8.40	32.06	26
Kentucky	11.43	26.34	43
Louisiana	14.28	39.32	36
Maine	20.25	24.64	82
Maryland	10.50	32.14	33
Massachusetts	26.00	33.73	77
Michigan	12.40	27.50	45
Minnesota	30.00	40.31	74
Mississippi	10.00	24.54	41
Missouri	14.00	28.36	49
Montana	28.80	33.88	85
Nebraska	70.00	23.11	303
Nevada	29.38	50.99	58
New Hampshire	10.00	30.31	33
New Jersey	11.29	32.90	34
New Mexico	20.85	29.26	71
New York	6.00	33.11	18
North Carolina	22.92	19.83	116
North Dakota	28.00	25.76	109
Ohio	18.91	34.56	55
Oklahoma	25.00	29.61	84
Oregon	28.15	32.48	87
Pennsylvania	17.00	42.84	40
Rhode Island	10.00	33.88	30
South Carolina	11.70	27.17	43
South Dakota	22.00	22.49	98
Tennessee	18.00	22.01	82
Texas	24.64	30.11	82
Utah	32.75	32.19	102
Vermont	20.00	32.10	62
Virginia	30.00	32.62	92
Washington	17.62	31.52	56
West Virginia	10.00	30.86	32
Wisconsin	19.69	31.95	62

Source: National Governors' Association and Physician Payment Review Commission, 1990; Health Care Financing Administration, BMAD, 1988.

Note: SFY89 refers to state fiscal year, 1989.

Table 15-9. Medicaid Fees (SFY89) and Medicare Prevailing Charges (1988), Routine Electrocardiogram (CPT 93000)

State	Medicaid	Medicare Prevailing Charge	Medicaid as percent of Medicare Prevailing Charge
Alabama	$25.20	$34.74	73
Alaska	55.00	61.01	90
Arkansas	26.25	29.90	88
California	24.60	44.44	55
Colorado	18.54	33.38	56
Connecticut	19.25	34.12	56
Delaware	25.32	32.96	77
District of Columbia	27.55	44.70	62
Florida	10.00	38.93	26
Georgia	26.75	32.32	83
Hawaii	36.46	44.80	81
Idaho	24.00	36.08	67
Illinois	17.65	32.72	54
Indiana	47.30	36.71	129
Iowa	30.63	32.70	94
Kansas	38.00	39.26	97
Kentucky	15.57	27.20	57
Louisiana	26.41	33.50	79
Maine	15.00	29.74	50
Maryland	13.00	31.96	41
Massachusetts	26.15	32.72	80
Michigan	21.98	29.75	74
Minnesota	24.00	33.60	71
Mississippi	18.90	33.50	56
Missouri	16.50	34.68	48
Montana	28.24	34.80	81
Nebraska	31.00	32.56	95
Nevada	36.16	45.98	78
New Hampshire	19.00	32.26	59
New Jersey	16.00	39.27	41
New Mexico	16.70	33.73	50
New York	15.00	44.52	34
North Carolina	22.96	29.08	79
North Dakota	29.60	39.35	75
Ohio	20.71	34.18	61
Oklahoma	20.00	31.84	63
Oregon	22.52	33.56	67
Pennsylvania	21.50	41.79	51
Rhode Island	20.00	42.86	47
South Carolina	14.30	29.80	48
South Dakota	25.00	25.95	96
Tennessee	24.14	33.20	73
Texas	34.26	39.93	86
Utah	20.98	33.79	62
Vermont	16.00	32.93	49
Virginia	21.00	33.38	63
Washington	23.41	39.46	59
West Virginia	15.00	32.56	46
Wisconsin	33.00	34.55	96

Source: National Governors' Association and Physician Payment Review Commission, 1990; Health Care Financing Administration, BMAD, 1988.

Note: SFY89 refers to state fiscal year, 1989.

Table 15-10. Medicaid Fees (SFY89) and Medicare Prevailing Charges (1988), Total Hysterectomy (CPT 58150)

State	Medicaid	Medicare Prevailing Charge	Medicaid as percent of Medicare Prevailing Charge
Alabama	$765.00	$1008.00	76
Alaska	1770.00	1433.10	124
Arkansas	993.75	893.49	111
California	810.72	1364.71	59
Colorado	495.00	980.15	51
Connecticut	828.00	1233.59	67
Delaware	648.83	861.19	75
District of Columbia	675.00	853.04	79
Florida	1094.00	1167.68	94
Georgia	1337.50	923.27	145
Hawaii	980.00	1254.10	78
Idaho	580.00	829.19	70
Illinois	614.10	1198.51	51
Indiana	1065.00	933.27	114
Iowa	816.97	832.43	98
Kansas	500.00	949.55	53
Kentucky	166.23	892.69	19
Louisiana	724.42	966.21	75
Maine	376.00	925.57	41
Maryland	356.00	1041.71	34
Massachusetts	1157.00	1087.72	106
Michigan	461.62	975.16	47
Minnesota	900.00	926.52	97
Mississippi	472.50	792.11	60
Missouri	360.00	843.75	43
Montana	611.60	895.82	68
Nebraska	825.40	931.63	89
Nevada	1161.60	1365.37	85
New Hampshire	400.00	896.00	45
New Jersey	257.00	1163.09	22
New Mexico	748.94	1040.70	72
New York	240.00	1448.08	17
North Carolina	594.40	937.51	63
North Dakota	621.75	839.80	74
Ohio	543.53	896.00	61
Oklahoma	750.00	919.44	82
Oregon	666.40	943.76	71
Pennsylvania	518.50	922.76	56
Rhode Island	420.00	1092.88	38
South Carolina	503.00	853.13	59
South Dakota	550.00	745.50	74
Tennessee	765.68	998.10	77
Texas	914.31	1073.39	85
Utah	518.71	785.85	66
Vermont	374.00	896.00	42
Virginia	420.00	903.28	47
Washington	520.40	963.67	54
West Virginia	383.00	894.23	43
Wisconsin	727.22	864.67	84

Source: National Governors' Association and Physician Payment Review Commission, 1990; Health Care Financing Administration, BMAD, 1988.

Note: SFY89 refers to state fiscal year, 1989.

Table 15-11. Medicaid Fees (SFY89) and Private Payers' Average Charges (1989), Vaginal Delivery (CPT 59410)

State	Medicaid	Private Payers' Average Charge	Medicaid as Percent Private Payers' Average Charge
Alabama	$700.00	$1036	68
Alaska	354.00	902	39
Arkansas	397.08	589	67
California	449.88	1091	41
Colorado	232.96	933	25
Connecticut	609.70	1436	42
Delaware	402.00	962	42
District of Columbia	600.00	1676	36
Florida	550.00	1168	47
Georgia	901.00	1095	82
Hawaii	263.20	621	42
Idaho	408.40	671	61
Illinois	550.00	951	58
Indiana	591.60	630	94
Iowa	619.54	696	89
Kansas	450.00	718	63
Kentucky	580.87	746	78
Louisiana	302.96	864	35
Maine	500.00	814	61
Maryland	895.00	1498	60
Massachusetts	580.00	1272	46
Michigan	373.32	902	41
Minnesota	398.20	536	74
Mississippi	531.20	836	64
Missouri	390.00	937	42
Montana	410.80	722	57
Nebraska	440.00	540	81
Nevada	824.73	822	100
New Hampshire	360.00	768	47
New Jersey	307.00	1666	18
New Mexico	366.39	688	53
New York	648.00	2139	30
North Carolina	550.00	881	62
North Dakota	400.00	568	70
Ohio	400.00	742	54
Oklahoma	525.00	749	70
Oregon	527.52	882	60
Pennsylvania	312.50	866	36
Rhode Island	407.00	939	43
South Carolina	700.00	699	100
South Dakota	200.00	505	40
Tennessee	362.50	710	51
Texas	562.62	1057	53
Utah	325.16	738	44
Vermont	625.00	708	88
Virginia	450.00	933	48
Washington	374.69	915	41
West Virginia	330.00	860	38
Wisconsin	371.99	570	65

Source: National Governors' Association and Physician Payment Review Commission, 1990; Health Insurance Association of America Surgical Healthcare Charges System, March 1989.

Note: SFY89 refers to state fiscal year, 1989.

Table 15-12. Index of Relative Medicaid Fees by State

State	Index
Alabama	1.07
Alaska	2.33
Arkansas	1.23
California	1.05
Colorado	.78
Connecticut	1.01
Delaware	.88
District of Columbia	.97
Florida	1.35
Georgia	1.64
Hawaii	1.43
Idaho	.89
Illinois	.82
Indiana	1.55
Iowa	1.21
Kansas	.86
Kentucky	.62
Louisiana	.88
Maine	.67
Maryland	.83
Massachusetts	1.30
Michigan	.85
Minnesota	1.19
Mississippi	.68
Missouri	.61
Montana	.98
Nebraska	1.20
Nevada	1.62
New Hampshire	.69
New Jersey	.50
New Mexico	1.16
New York	.53
North Carolina	1.07
North Dakota	1.01
Ohio	.79
Oklahoma	1.18
Oregon	1.01
Pennsylvania	.77
Rhode Island	.68
South Carolina	.92
South Dakota	.87
Tennessee	1.05
Texas	1.20
Utah	.99
Vermont	.78
Virginia	.81
Washington	.86
West Virginia	.61
Wisconsin	1.02

Source: National Governors' Association and Physician Payment Review Commission, 1990; Health Care Financing Administration, Medicaid Statistical Information System, 1989.

Note: The index measures each state's Medicaid fee level relative to the average for all states. For example, Alabama's Medicaid fees are about 107 percent of average Medicaid fees for all states.

Comparing Medicaid Fees with Medicare and Private Insurance Charges. If Medicaid physician fees are significantly lower than fees paid by other insurers, Medicaid beneficiaries may be at a disadvantage in gaining access to care in physicians' offices. Previous research summarized in the Commission's 1990 report suggests that when other payers pay higher rates than Medicaid, physicians are less likely to serve Medicaid patients (PPRC 1990). The survey data demonstrate that in some states the differences in payment levels among the various payers are quite large.

Medicaid fees are generally lower than Medicare charges. A second index compares Medicaid fee levels with Medicare prevailing charges for the previously described bundle of services (Table 15-13).[7] State Medicaid fees are about 69 percent of Medicare prevailing charges.[8] Medicaid fees as a percentage of Medicare prevailing charges are highest in Alaska, Arkansas, Georgia, Indiana, and Nebraska. The Medicaid to Medicare fee ratio is lowest in New Jersey, New York, and West Virginia.

The ratio of Medicaid to Medicare physician fee levels, however, varies by both service and state (Tables 15-7 through 15-11). For intermediate office visits, Medicaid fees range from 35 percent of Medicare charges in New York to 124 percent in Tennessee. For EKGs, they range from 26 percent in Florida to 129 percent in Indiana. For total hysterectomies, they range from 17 percent in New York to 145 percent in Georgia. For chest X-rays, they range from 27 percent in Florida to 126 percent in Texas.[9]

The implementation of the Medicare Fee Schedule, with its changes in the relative values of services, will alter the ratio of Medicaid to Medicare fees. For services whose payments will increase under the Medicare Fee Schedule (for example, evaluation and management services), differences between fee schedule and Medicaid payments would be larger than those between current Medicare prevailing charges and fees paid by Medicaid. For 13 selected services, Medicaid payments would have been about 64 percent of Medicare Fee Schedule payments if the fee schedule had been implemented in 1988 (Table 15-14). Medicaid fees range from 53 percent of the fee schedule amount for comprehensive hospital visits to 100 percent of the fee schedule for electrocardiograms.

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[7] Since Medicaid programs pay the lesser of the fee schedule amount or the submitted charge, actual payments will be equal to or less than reported fees. If the comparison were made to Medicare allowed charges, Medicaid maximum payments would have been compared with Medicare actual payments. It, therefore, is more fitting to compare Medicaid maximum payments to Medicare prevailing charges.

[8] This percentage is the expenditure-weighted mean of the index values. States with greater expenditures are weighted more heavily than those that spend less.

[9] Originally, states were proscribed from setting Medicaid fees higher than Medicare reasonable charge levels. This requirement was repealed under the Omnibus Budget Reconciliation Act of 1981. States are now only required to set payment rates that are consistent with efficiency, economy, and quality of care. This may explain why some states pay more than Medicare for certain services.

Table 15-13. Index of Medicaid Fees Relative to Medicare Prevailing Charges by State

State	Index
Alabama	.72
Alaska	1.06
Arkansas	1.20
California	.54
Colorado	.81
Connecticut	.56
Delaware	.50
District of Columbia	.51
Florida	.71
Georgia	1.12
Hawaii	.79
Idaho	.76
Illinois	.48
Indiana	1.02
Iowa	.91
Kansas	.79
Kentucky	.63
Louisiana	.66
Maine	.62
Maryland	.51
Massachusetts	.94
Michigan	.62
Minnesota	.86
Mississippi	.66
Missouri	.57
Montana	.74
Nebraska	.99
Nevada	.79
New Hampshire	.67
New Jersey	.40
New Mexico	.69
New York	.30
North Carolina	.93
North Dakota	.75
Ohio	.60
Oklahoma	.78
Oregon	.66
Pennsylvania	.51
Rhode Island	.55
South Carolina	.81
South Dakota	.85
Tennessee	.92
Texas	.77
Utah	.89
Vermont	.71
Virginia	.73
Washington	.69
West Virginia	.35
Wisconsin	.76

Source: National Governors' Association and Physician Payment Review Commission, 1990. Health Care Financing Administration, BMAD, 1988, and Medicaid Statistical Information System, 1989.

Note: The index measures Medicaid fees relative to Medicare prevailing charges. For example, Alabama's Medicaid fees are, on average, 72 percent of Medicare prevailing charges in the state.

Table 15-14. Medicaid Payment as a Percent of Medicare Fee Schedule Payment for Selected Services

Service	Median Percent
Comprehensive Office Visit, New Patient	72
Limited Office Visit, Established Patient	65
Intermediate Office Visit, Established Patient	60
Comprehensive Hospital Visit, Initial	53
Intermediate Hospital Visit, Subsequent	55
Intermediate Emergency Room Visit	54
Comprehensive Consultation, Initial	64
Routine Electrocardiogram	100
Endoscopy, Upper GI	87
Total Hysterectomy	80
Cataract Removal	74
Chest X-Ray, Two Views, Professional Component	71
Chest X-Ray, Two Views, Global Service	69

Source: National Governors' Association and Physician Payment Review Commission, 1990; Physician Payment Review Commission simulations, 1989.

For services that are not generally provided to Medicare beneficiaries (pediatric surgeries and deliveries), Medicaid physician fees were compared with submitted charges reported by private insurance companies. Most analysts believe that charges approved by private payers are substantially higher than those allowed by Medicare. Thus, the ratios of Medicaid fees to those of private insurers would be expected to be even lower than the ratios of Medicaid fees to Medicare fees discussed earlier.[10] Medicaid fees are about 55 percent of charges for the five services compared (Table 15-15). The percentage varies from about 37 percent for tonsillectomy and adenoidectomy to 60 percent for total obstetrical care with a vaginal delivery. The percentage also varies across the states for each service. Two states (Nevada and South Carolina), for example, pay the same amount as reported by private payers for vaginal delivery, while New Jersey pays about 18 percent of charges to private payers (Table 15-11).

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[10] These ratios may exaggerate the difference between Medicaid and private payer rates somewhat because private payers may pay less than submitted charges.

Table 15-15. Medicaid Payment as a Percentage of Private Payer Charges for Selected Services

Service	Median Percentage
Total Obstetric Care, Vaginal Delivery	60
Vaginal Delivery	53
Cesarean Delivery	53
Tonsillectomy and Adenoidectomy, under 12 years	37
Repair Inguinal Hernia, under 5 years	45

Source: National Governors' Association and Physician Payment Review Commission, 1990; Health Insurance Association of America Surgical Healthcare Charges System, March 1989.

Some states exhibit consistent patterns of either high or low levels of Medicaid fees relative to the fee levels of other payers. For example, compared with other states, Maryland, Missouri, New Jersey, New York, Rhode Island, and West Virginia all have consistently low ratios of Medicaid fees to those of other payers. This ratio is consistently high for Alaska, Arkansas, Georgia, Iowa, and Indiana. This suggests that although Medicaid fee levels in a few states are quite close to those of other payers, some states would have to raise Medicaid fees for most services to match those of Medicare or private payers.

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CHAPTER 16

PHYSICIAN PAYMENT UNDER MEDICAID: OPTIONS FOR REFORM

This chapter reviews the options for reforming Medicaid physician payment that the Commission is considering for its July 1991 report to the Congress on this issue. The chapter first sets out goals to guide its assessment of policy options. It then reviews a series of options including:

- raising fees to Medicare levels or a percentage of them;
- raising fees for selected procedures, geographic areas, or providers;
- expanding support for institutional providers;
- expanding the capacity of health maintenance organizations (HMOs);
- reducing the administrative burden on physicians, and
- providing malpractice relief.

While the federal government can facilitate changes through mandates or incentives for some of the options, for others much of the initiative for change would depend upon the states.

GOALS FOR REFORMING PHYSICIAN PAYMENT UNDER STATE MEDICAID PROGRAMS

The congressional mandate to study physician payment under state Medicaid programs directs the Commission to consider the adequacy of physician fees, physician participation, and beneficiary access to care. In its work in this area, the Commission has found that the links between these three policy concerns are complex. Policy options designed to affect fees may or may not affect participation and access. Similarly, participation may be affected by factors other than fees.

In reviewing policy options, therefore, the Commission believed it appropriate to establish goals to guide it in evaluating potential reforms. Some of the goals listed below draw upon the Commission's earlier work on Medicare physician payment. Others reflect the different populations served by the Medicaid program and its unique federal-state design. The Commission recognizes that trade-offs among these goals are inevitable.

Access to Care

Reforms in physician payment should enhance access to medical care for Medicaid beneficiaries. In particular, reforms should initially enhance access to care in physicians' offices and for services such as prenatal care, obstetric services, and other primary care.

Quality of Care

Reforms in the method of physician payment should maintain or improve the current level of quality. Special attention should be given so that reforms encourage improvements in key health status indicators such as infant mortality rates and the rate of low birthweight infants.

Equity Among Physicians

Reforms should address inequities among physicians such that physicians who choose to treat Medicaid beneficiaries are not placed at substantial economic disadvantage relative to their peers. Physicians should not be forced to make trade-offs between service to low-income communities and the viability of their practices.

Constraint in Expenditure Growth

Reforms should recognize the need for fiscal responsibility and the competing demands placed on both federal and state tax dollars. Methods of constraining growth that encourage more appropriate and cost-effective care should be explored.

Administrative Simplicity

The method of paying physicians should be easy for physicians, beneficiaries, and the general public to understand and for both state and federal agencies to administer. Short-term reforms should be orderly and consistent with long term goals.

Flexibility

Reforms should accommodate the diverse needs of the distinct populations served by state Medicaid programs (pregnant women, children, the elderly, and the disabled) as well as needs unique to each state.

Equitable Treatment of Beneficiaries

Reforms should recognize the rights of Medicaid beneficiaries to receive appropriate medical services of high quality and to be treated with dignity.

OPTIONS FOR REFORM

The Commission is considering a number of options for reforming Medicaid physician payment. Several of these options involve altering payment rates to physicians. Other options involve encouraging alternative mechanisms for the delivery of care to Medicaid beneficiaries or altering the administrative structure of the Medicaid program to improve access. Not all of these options are mutually exclusive.

Policy Options to Change Fees

This section begins with a short summary of the research literature on the relationship between physician fee levels and access to care. Several possible policy options for changing Medicaid fees are then reviewed, including:

- raising fees to Medicare levels or a percentage of them;
- raising fees for selected procedures;
- raising fees for selected geographic areas, and
- raising fees to selected providers.

The discussion focuses on strengths and weaknesses of the policy options. The respective roles of the federal and state governments in implementing these options are also considered.

Effect of Physician Fee Levels on Access to Care. Most studies agree that higher physician fees result in an increase in access to physician office care by Medicaid beneficiaries. Higher fees have been found to increase both the likelihood that physicians will treat any Medicaid patients and the number of Medicaid patients they treat (Davidson 1982; Davidson and others 1983; Hadley 1978; Held and others 1983; Mitchell 1983; Mitchell and Schurman 1984; Perloff and others 1986; Sloan and others 1978).

These findings are consistent with the theory that Medicaid and other payers compete for physicians through their fees. Most studies have included measures of either Medicare or private insurer fees in their analysis, concluding that, when competing payers pay higher fees, physicians are less likely to treat Medicaid patients (Hadley 1978; Held and others 1983; Mitchell 1983; Mitchell and Schurman 1984; Perloff and others 1986; Sloan and others 1978). Almost all of these studies are dated, however, so there is some question about whether the relationships still hold. Moreover, since these studies are based on cross-sectional analysis, they do not adequately test whether raising fees would improve access.

There are also some limitations on the strategy of using higher fees to improve access to care. In examining access to maternity services in Cook County, Illinois, Fossett and others (1990) concluded that, due to a maldistribution of physicians, neither modest increases in Medicaid fees nor eligibility expansions would improve access in inner-city areas. Modest fee increases would be insufficient to attract an adequate supply of physicians to these areas. Short of raising Medicaid fee levels to those of other payers, the study concluded that policies should focus on improving access through expanded support to existing providers such as inner-city hospitals, community health centers, and local public clinics, and perhaps through reinstatement of the National Health Service Corps.

These findings reinforce earlier work (Fossett and Peterson 1989) suggesting that residential segregation of Medicaid patients and fee differences between Medicaid and private patients created incentives for physicians to decide between two extremes: either building a large practice heavily dependent on Medicaid revenue or accepting few Medicaid patients.

With respect to Medicaid beneficiaries' access to medical care across all settings, the literature has been consistent on two points. First, Medicaid beneficiaries in states with low physician fees appear to have access to the health care system on par with beneficiaries in states that have higher physician fees. That is, Medicaid fees appear to have no effect on the proportion of Medicaid beneficiaries receiving services, the number of services received, or the probability of contact with a physician. (Long and others 1986; Cohen 1989; Rosenbach 1989). Fee levels, however, do appear to affect the site in which services are received (Long and others 1986). In areas where Medicaid fees were only half as high as Medicare's, more visits took place in settings such as outpatient departments, emergency rooms, health department clinics, and community and migrant health centers (C/MHCs).

Raising Fees to Medicare Levels or a Percentage of Medicare Fees. Raising Medicaid fees to Medicare levels would entail three major changes in Medicaid payments to physicians. First, this option would require raising most fees in most states. Second, since Medicare will begin to pay physicians under the Medicare Fee Schedule in 1992, this would mean that Medicaid payments to physicians would be based on resource costs. Under the fee schedule, Medicare fees for evaluation and management services will increase; fees for surgical and other technical procedures will decrease. Medicaid physician fee levels could undergo the same kinds of shifts as Medicare fees. The creation of a Medicaid fee schedule would require development of resource-based relative values for services generally not covered by Medicare, such as pediatric surgeries and preventive care. Third, since Medicaid programs usually pay the same rate across the entire state, basing payment on the Medicare Fee Schedule would result in differential Medicaid fees based on Medicare payment areas in some states.[1]

Raising Medicaid fees to Medicare Fee Schedule levels could increase total expenditures for Medicaid physician services an estimated 36 percent, or about $1.28 billion, assuming that there is no increase in the volume of physician services.[2] Total Medicaid expenditures (all services including physicians, hospitals, and long-term care) would increase by 2.2 percent. These additional expenditures would be split between the states and the federal government. The state share would be approximately $552 million, and the federal share would be an estimated $732 million.

The cost of this option could be higher if access improves with increases in the volume of services provided to Medicaid beneficiaries.[3] The effect of changes in fee levels on total expenditures will be influenced by physicians' decisions regarding the volume and mix of services provided to Medicaid beneficiaries. The magnitude of these responses for any particular state is difficult to predict, as is the length of time it may take for physicians to respond to payment changes.

The cost of raising Medicaid physician fees to Medicare Fee Schedule levels would vary among states because of the existing differences in the levels of Medicaid fees among states. The Commission's survey of Medicaid physician fees found large variations across states in the levels of physician fees for the same services (see Chapter 15). States with low current Medicaid physician fee levels relative to Medicare Fee Schedule levels could incur additional expenditures well above the average 36 percent increase.[4]

Expenditure increases could be constrained by raising Medicaid fees to less than 100 percent of Medicare Fee Schedule levels. This option would still result in payments based on resource costs and changes in payment areas for some states.

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[1] The Commission has recommended that current Medicare payment localities be replaced with statewide fee schedule payment areas except in states with high intrastate price variation (see Chapter 5).

[2] This estimate is based on a Commission simulation using Medicaid fee data from the Commission's survey (see Chapter 15), Medicaid utilization data from the Health Care Financing Administration's (HCFA) Medicaid Statistical Information System, expenditure data from the 1989 HCFA Form 64, and Medicare Fee Schedule amounts simulated using 1988 Part B Medicare Annual Data files. The estimate is 36 percent of 1989 Medicaid physician expenditures.

[3] The Commission's July 1, 1991 report to the Congress on Medicaid physician payment will include cost estimates including the cost of changes in the volume of services provided.

[4] The Commission's July report will include estimates of individual state costs.

Medicaid fee levels could be raised without directly linking all such increases to the Medicare Fee Schedule. States that have Medicaid fees below the Medicare level could be encouraged or required to raise fees to either a specified percentage (for example, 20 percent) above current levels or to a selected fee index value that characterizes Medicaid payment relative to Medicare. The latter would give states discretion in choosing the mix and level of fee increases across services. Neither option would require use of fee schedule relative values or changes in payment areas.

If physicians respond to increases in fees by increasing their Medicaid participation, improved beneficiary access for those services can be expected. If increases were linked to the Medicare Fee Schedule, a few fees in some states could, however, decrease.[5] For example, current Medicaid payments for cataract removal (*Current Procedural Terminology* code 66984) in Indiana are overvalued by 38 percent relative to the Medicare Fee Schedule.

The effects of changing fee levels on beneficiary access to care may vary among states because of differences in current payment levels relative to other payers. If access to care is a function of the price physicians can get from other payers, access gains may be small in states with high Medicaid fee levels relative to those of other payers.

Raising fees alone may not solve access problems. In some areas, such as inner-city and rural areas, the present supply of physicians is too small to provide needed services. While it might be possible to raise fee levels enough to make some physicians willing to locate in underserved areas and to treat Medicaid patients, other factors may limit the magnitude of this response. These include cultural and language differences, characteristics of the area itself, and physicians' perceptions that Medicaid patients tend to have more serious medical problems, miss more appointments, and be less compliant than other patients. Some physicians are also wary that being labeled as a "Medicaid physician" may prompt other patients to seek care elsewhere.

Increase Fees for Selected Procedures. An alternative to changing the entire structure of Medicaid physician fees would be to select specific services to receive increased fees. This approach could be used to target certain services that beneficiaries have particular problems gaining access to, such as primary care. A number of states have already implemented fee increases for selected groups of services that are thought to present access problems. Within the past few years, such states as Arkansas, California, Maine, and Washington have increased fees for maternity services. Maine, Michigan, New Hampshire, and North Carolina are among the states that have recently increased visit fees.

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[5] Since most states pay significantly far below Medicare rates, this would occur in only a few states with high Medicaid fees for surgical services.

The main advantage of increasing fees for a selected set of procedures is that expenditures can be directed at services where access problems are believed to be most serious. This strategy could potentially increase access to care at a lower cost than previous approaches. This option could also be viewed as a first step toward increasing fees for all services.

There is little extant information, however, on which services present particular access problems for Medicaid beneficiaries and should therefore be funded at higher levels. In addition, this alternative has many of the same problems as the option of raising fees for all procedures.

Increase Fees in Selected Geographic Areas. Another alternative approach to improve Medicaid beneficiaries' access to care is to alter the Medicaid fee structure in underserved geographic areas. The objective of this option would be to affect the participation decisions of physicians already located in underserved areas and to help attract more physicians to those areas where physician supply is too low to adequately serve the population.

Research has identified particular access problems for Medicaid beneficiaries in both urban and rural areas. In the last 20 years, low-income groups residing in urban areas, particularly the minority poor, have experienced increasing geographic concentration. This residential segregation of the poor from the nonpoor decreases Medicaid beneficiaries' access to "mainstream" physicians who treat a mixture of Medicaid and non-Medicaid patients (Fossett and others 1990). Increasing Medicaid rates to physicians practicing in or near these areas where the urban poor are concentrated could induce larger numbers of physicians to serve Medicaid beneficiaries living in these areas.

In rural areas, physicians, particularly obstetricians, often bring in less revenue than urban physicians because their private and Medicare charges are lower, have larger Medicaid patient loads, and often have less efficient practices due to lower volume. Yet they face malpractice premiums similar to those of urban physicians (Rosenblatt 1990). Many rural physicians thus find it difficult to maintain a practice that includes a large portion of Medicaid patients. Increases in Medicaid fees in rural areas may be one avenue to inducing rural physicians to participate in Medicaid and attracting more physicians to underserved rural areas. The latter would benefit all rural residents, not just Medicaid beneficiaries.

The evidence on the effect of physician income on locational decisions is mixed (Ernst and Yett 1985). Increasing fees may help in areas where the physician supply is adequate, but attracting new physicians to an area could be more difficult. A number of factors, such as the socioeconomic characteristics of the population living in an area, the availability of hospital facilities, and the amenities available in an area also enter into physician location decisions. Increasing Medicaid fees may help to attract physicians to underserved areas, but the magnitude of the investment needed to attract physicians to a given area is unknown and may vary with the other attributes of an area. It may, however, be critical in retaining physicians already located in these areas.

Increasing fees in selected geographic areas would be a direct approach to addressing the problems of inadequate access in areas such as the inner-city and rural areas. Objective criteria for selecting areas to target would have to be developed in order to implement this option. It is possible that existing criteria used to define Health Professional Shortage Areas and Medically Underserved Areas could be used for this purpose. Some changes in claims-processing systems might also be necessary since most states currently do not have geographic fee differentials. Like the option of increasing fees for selected services, this approach would increase expenditures less dramatically than a full scale revamping of the Medicaid physician payment system.

Increase Fees to Selected Physicians. Rather than increase fees to all physicians, it may be desirable to increase fees only to those providers who agree to accept additional responsibility for certain patients. Under this option, physicians would essentially trade an expanded commitment to a defined Medicaid caseload for enhanced payment rates.

Some states have used this strategy under special waivers from the Department of Health and Human Services (HHS). This section briefly reviews the types of arrangements permissible under current law and discusses what is known about their effects on physician participation and beneficiary access.

Current Law. Section 2175 of the Omnibus Budget Reconciliation Act of 1981 (OBRA81) gave the HHS Secretary authority to waive certain statutory requirements to permit states to develop cost-effective alternative methods of service delivery or payment.[6] Programs authorized under this provision are often called "freedom of choice" waivers since most have been granted to waive the provision that beneficiaries may choose among all qualified providers willing to accept Medicaid when seeking covered services.[7] Requests for waivers must demonstrate that the program will be cost-effective and that access to medically necessary services of adequate quality will not be impaired.

There are four basic types of programs that states may implement under a Section 2175 waiver.[8] These are:

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[6] This option was primarily designed to grant states greater flexibility to control costs, not to improve access.

[7] Waivers have also been granted from provisions requiring that the scope of services be the same for all categorically needy beneficiaries (comparability) and that the program operate uniformly throughout the state (statewideness).

[8] Some states have waivers to operate programs that combine features from several of these four options.

- primary care case management programs that restrict providers from whom a beneficiary may obtain services;
- "central broker" programs that assist beneficiaries in choosing among several competing plans (generally several HMOs and a fee-for-service case management plan);
- programs that make available an expanded set of services to beneficiaries who use cost-effective providers, and
- programs restricting providers to those meeting state payment, quality, and utilization standards.

Of 23 Section 2175 waivers operational in February 1988, 21 were for case management. Two basic models exist.[9] Under the first, states partially capitate primary care providers for a particular group of beneficiaries. Physicians are responsible for their own services and ambulatory referrals, with the state retaining fiscal responsibility for inpatient care. Beneficiary enrollment in this model is usually voluntary.

Under the second, states contract with individual physicians, paid on a fee-for-service basis, to act as gatekeepers for an assigned group of beneficiaries. Beneficiary enrollment in such programs is generally mandatory.

Both models share the common goal of containing costs through better utilization control and coordination of care. A second objective has been to increase access to mainstream care by providing incentives for mainstream physicians to take Medicaid patients. These incentives include small case management fees (typically $3 per month) and the opportunity to develop stronger and more structured relationships with Medicaid beneficiaries by reducing "doctor shopping" and encouraging continuous care.[10]

A recently established example of the primary care case management approach is New York's Preferred Physician and Children's Program. Participating physicians receive fees for pediatric services that approximate those paid by commercial insurers and are nearly triple those paid by the regular Medicaid program. In return, they must provide 24-hour telephone coverage and accept responsibility for coordinating care. For primary care physicians, this means scheduling elective hospital admissions, providing assistance with emergency admissions, managing hospital care and discharge planning, scheduling both referrals and ancillary services, and participating in the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program. All participating physicians must be board-certified and have active hospital admitting privileges.

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[9] Wisconsin has taken a third approach to primary care case management, using a full capitation model.

[10] Maryland is currently seeking a waiver for a primary care case management program that would provide enhanced visit fees to all physicians instead of paying monthly management fees to just those agreeing to be case managers.

Since the program began in October 1990, 800 physicians have agreed to accept these terms. An evaluation of the program's effects will be conducted in late 1991.

Effects on Access and Participation. The Health Care Financing Administration's 1983 Medicaid Program Evaluation assessed the effectiveness of freedom of choice waiver programs in meeting goals of cost containment and enhanced access (Bell and others 1987). Case studies were conducted in six states (Michigan, Wisconsin, Kansas, Colorado, Utah, and Nevada), that had programs considered mature and large enough to yield useful information and that represented various approaches to payment, enrollment of providers and beneficiaries, and implementation.[11]

Although the primary care case management programs were well received by the physician community for being fair, well run, and effective in reducing inappropriate utilization, HCFA's evaluation found little evidence that the incentives attracted new physicians into the program. No demonstrable changes were found in quality, access, and beneficiary satisfaction. In some cases, however, beneficiaries' established relationships with physicians were disrupted if their physician did not join the program or delayed enrolling. Finally, while savings were achieved in all programs, ranging from $25 per enrollee year in Colorado to $178 in Kansas, all states were thought to have grossly underestimated the resources necessary to establish the case management efforts, particularly for enrollment of beneficiaries.

These findings are in contrast with the experience of a case management demonstration program that operated between July 1983 and December 1985 in Suffolk County, New York (Hohlen and others 1990). Physicians agreeing to act as case managers were randomly assigned to receive either augmented visit fees (nearly double that paid to other physicians) or monthly capitation payments. After a one year period, analysis of claims data demonstrated that, controlling for race and prior utilization differences, children assigned to augmented fee-for-service physicians received more primary care from office-based physicians than children enrolled in the regular Medicaid program. Children assigned to capitated physicians received at least the same amount of care as those not enrolled in the demonstration. These results suggest that higher fees may increase access and that limited risk capitation does not necessarily reduce access.

These results should be interpreted with caution, however. First, patients were free to switch physicians or withdraw from the demonstration at any time. This escape valve was thought to be critical in ensuring patient satisfaction. Second, the analysis did not consider the effects of capitation on chronically ill children who are likely to require specialist care.

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[11] The six states included one fee-for-service program, two capitated risk sharing arrangements, and three programs offering both HMO and fee-for-service options.

The primary care case management option holds promise in increasing the willingness of participating physicians to serve more Medicaid patients and improving both access and continuity of care for beneficiaries. Both regulatory concerns and financial problems, however, may impede the expansion of these programs. A simplified waiver process and greater financial incentives to support increased fees, along with expanded provider relations activities, may be needed to achieve this goal.

Options for Policies Other Than Raising Fees

As mentioned above, physician participation in the Medicaid program is affected by factors other than fee levels. These factors include both physician and population characteristics, the number and specialty mix of physicians in a given geographic area, and various aspects of each state's Medicaid program. This section outlines four options for improving physician participation or access to care for Medicaid beneficiaries that do not involve changing fee levels. The goal of increasing Medicaid beneficiary access to care might be met by adopting some or all of these options separately or in addition to fee increases.

Increase Support to Institutional Providers. If office-based physicians are not willing to expand their practices in areas where Medicaid beneficiaries live, improving access to care may only be accomplished by expanding the capacity of existing providers such as hospital outpatient departments and community health centers. In this section, current Medicaid payment to these providers is discussed.

Hospital Outpatient Departments. As discussed above, Medicaid beneficiaries who lack relationships with office-based physicians often use hospital outpatient departments and emergency rooms as their primary source of care. States pay for care in these sites using a variety of methodologies including reasonable cost payment, prospective payment, fee schedules, and negotiated rates. Many states pay the physician at the same rate that would be received for a service provided in an office and then pay an additional amount to the facility. Others have sought to discourage physicians from providing care in these settings by limiting payment for an outpatient department service to a percentage of the office rate or by paying reduced rates for emergency room treatment of nonemergency problems.

Outpatient departments provide a significant amount of care to Medicaid beneficiaries. For example, in 1988 hospital outpatient departments provided about 15 percent of Medicaid physician visits, accounting for 24 percent of expenditures on visits. Care in this setting, however, is expensive and does not provide a stable, continuous relationship with a health professional. But since some hospitals are located where Medicaid beneficiaries live, they serve as a regular source of care for community residents. It may be possible to build on this source of care, creating incentives for hospitals to establish appropriate primary care settings and outreach programs that substitute for services currently provided by the outpatient department and emergency room. This would involve developing a new, separate primary care delivery system in the community that is distinct from the outpatient department.

Community Health Centers. In 1989, there were 540 community and migrant health centers serving nearly 6 million Americans nationwide. Ranging in size from small, single physician practices to centers with caseloads of up to 60,000, C/MHCs provide primary care and social support services in underserved areas to a population that is overwhelmingly either uninsured or publicly insured. Fees are based on ability to pay.

Community and migrant health centers receive financing from multiple sources. Approximately half their support is in the form of direct federal grants; some health centers, however, receive no federal aid. The balance comes from patient fees; public and private insurance; and state, local, and other contributions. In 1986, Medicaid accounted for only 15 percent of C/MHC revenues. Medicaid's share of C/MHC revenues may grow as a result of the OBRA89 provisions discussed below.

There are at least three reasons why it may be desirable to use community health centers as a base for expanded access to Medicaid beneficiaries. First, C/MHCs have strong roots in low-income communities. From the outset, community residents have played an integral role in overseeing their operations and developing programs to meet unique local needs. Second, C/MHCs have a track record of success in improving health status and access to services including prenatal care, immunizations, preventive services, and dental care (NACHC 1990). Third, community health centers appear to provide cost-effective care. Several studies have documented the impact of health centers on reduced emergency room use, particularly for children. Hospitalization rates and lengths of stay are lower (NACHC 1990). These findings date from the 1970s, however, so it is not known if these results would still hold today.

Several different types of mechanisms could be used to expand the capacity of community and migrant health centers. These include increasing federal grants to operate or start up centers, expanding educational loan repayment programs to offset manpower losses from the scaled down National Health Service Corps (see Chapter 17), and removing barriers to obtaining affordable and adequate professional liability insurance.

Reforms in Medicaid's payment methodology to community health centers may also affect the future ability of C/MHCs to serve both Medicaid and uninsured patients. Until recently, 30 states paid C/MHCs on a fee-for-service basis at rates comparable to those paid to private physicians; one paid at rates below those paid to private physicians (Lewis-Idema 1989). Under a provision of OBRA89 effective April 1, 1990, however, community and migrant health centers are now assured 100 percent of reasonable cost payment for services provided to Medicaid patients.[12] This provision is expected to result in an additional $50 million in Medicaid revenue to federally funded grantees. This reform in Medicaid payment, however, may not ensure the financial solvency of C/MHCs if the expanded support is used to help finance health care for the uninsured.

The feasibility of greatly expanding the capacity of C/MHCs to serve Medicaid patients is uncertain. There are a limited number of C/MHCs in existence, particularly in rural areas. Development of new C/MHCs would require significant capital investment, strong community involvement, and physicians to staff them. Expanding the capacity of other types of settings, for example, maternal and child health clinics operated by state and local health departments, could also increase the supply of medical care available to Medicaid beneficiaries. These facilities have played an important role in providing a broad array of medical and social support services to low-income pregnant women and children.

Expand Capacity of HMOs and Other Risk Contracting Organizations Serving Medicaid Beneficiaries. Expanded enrollment in reputable HMOs or other organizations holding Medicaid risk contracts could improve access to care for those beneficiaries who currently have no usual source of care. This section discusses the current Medicaid provisions for enrollment in HMOs and outlines some of the major obstacles to expanding their capacity to serve Medicaid beneficiaries.

Current Law. Since the Medicaid program was established, states have been able to enter into risk contracts with HMOs or prepaid health plans (including community, migrant, and Appalachian regional health centers).[13] In 1987, 29 states had some form of capitated program serving an estimated 2.3 million beneficiaries (about 10 percent of all Medicaid beneficiaries). The scope of these efforts varied considerably. In Alabama, only 1,770 beneficiaries are voluntarily enrolled in one HMO. By contrast, in Wisconsin, nearly 115,000 beneficiaries in Madison and Milwaukee Counties are required to enroll in one of twelve HMOs.

Most risk contracts are comprehensive, meaning that the contractor agrees to accept risk either for any three categories of service that are mandatory for all Medicaid programs or for inpatient care and any other mandatory service.[14] A handful of states, particularly those lacking full service HMOs willing to participate in Medicaid, have entered into partial capitation arrangements, typically either for physician and diagnostic services or for dental care.

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[12] This provision also affects health care for the homeless programs and nonfederally funded health centers that meet certain criteria under the Public Health Service Act.

[13] As noted above, not all community health centers are enrolled as prepaid plans.

[14] All state Medicaid programs must provide a standard benefit package that includes inpatient and outpatient hospital services; physician services; laboratory and X-ray services; family planning; skilled nursing facility services for adults; home health care for persons entitled to skilled nursing facility care; rural health clinic services; nurse midwife services; and early and periodic screening, diagnosis, and treatment for children.

Capitation rates for Medicaid risk contracts are set by states and must not exceed the fee-for-service equivalent. This is similar to Medicare's average adjusted per capita cost (AAPCC) except there is no set percentage limit. Typically, states pay between 90 percent and 100 percent of the average cost under Medicaid fee-for-service arrangements. There is some concern that this method of rate setting results in capitation payments too low to meet the needs of Medicaid beneficiaries, particularly those with poor health status such as persons with Acquired Immune Deficiency Syndrome and premature infants (Spitz 1987). Some states also use negotiation in rate setting. A few provide an additional administrative allowance to cover costs associated with marketing, claims processing, and utilization review.

There are several requirements for HMO participation in Medicaid. First, although HMOs need not be federally qualified, they must meet state criteria concerning their ability to provide covered services and to protect beneficiaries from liability in the event of the organization's insolvency.[15] Second, no more than 75 percent of a particular HMO's enrollees may be Medicare or Medicaid beneficiaries. Under current law, this requirement can be waived for certain risk contracts, including community and migrant health centers operating as prepaid plans, publicly operated HMOs, and organizations holding contracts for less than three years. Third, enrollees must be permitted to disenroll without cause on one month's notice.

Options for Expanding HMO Participation in Medicaid. There are several barriers to accepting Medicaid risk contracts that could be removed by federal or state action. These include improving payment rates, providing allowances for the high marketing costs associated with the significant turnover rate among Medicaid beneficiaries, and improvements in state administration (Anderson and Fox 1987). In a 1990 survey of member plans by the Group Health Association of America, increasing capitation rates was cited as the most desirable improvement for both maintaining HMOs with current Medicaid risk contracts and encouraging new plans to participate. Other options rated highly were rolling and six-month eligibility guarantees and including administrative expenses in rate determinations (Group Health Association of America 1990).

Prospects. The improvements discussed above could create a more favorable climate for HMOs to serve Medicaid beneficiaries. In particular, increasing physician fees would likely result in higher capitation rates. But this option may not be suited to all areas.

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[15] Federally qualified HMOs have the advantage of being offered guaranteed eligibility in some states. This provision of OBRA81 permits states to continue to pay premiums for a beneficiary for up to six months following enrollment, even if the enrollee ceases to be Medicaid eligible. Other incentives for beneficiaries include exemption from nominal copayments and, in some cases, benefits not ordinarily covered by the Medicaid program.

Medicaid's experience with managed care arrangements to date has been mixed. The most promising experiences so far have been in those areas where the level of HMO penetration in the non-Medicaid market is high, where physicians are experienced with capitated arrangements, and where states are willing to offer inducements such as favorable payment rates and stop-loss protection (Anderson and Fox 1987). HMOs must also be able to serve a population whose needs may differ from current enrollees (for example, high-risk pregnant women, the mentally and physically disabled, and children with special health care needs). In addition, they must be prepared to compete for enrollees on different terms. For example, while HMOs have stressed the availability of preventive services as an alternative to traditional fee-for-service plans, most Medicaid beneficiaries are already covered for these services.

A recent General Accounting Office (GAO) audit of two HMOs serving Medicaid beneficiaries in the Chicago area also suggests caution in expanding the capacity of Medicaid HMOs. Strong external requirements must be in place at the outset in order to ensure quality of care (GAO 1990a). These include requirements that HMOs submit detailed utilization data to state agencies and maintain effective quality assurance programs and that subcontractors (including physician groups) meet financial solvency tests. Requirements should also demand that HMOs enroll sufficient beneficiaries to ensure an adequate risk base and that states have mechanisms to investigate reported quality of care problems.

Reduce Administrative Burden for Participating Physicians. Physicians have long contended that the complexity of Medicaid paperwork, the high proportion of returned claims, and long delays in receiving payment provide strong disincentives to seeing Medicaid beneficiaries. In fact, some argue that they would be willing to accept lower fees from Medicaid were it not for the additional burden and inconvenience of filing claims (Lewis-Idema 1988). Empirical evidence also suggests that participation is affected by the way claims are processed. Mitchell and Schurman (1984) found that participation rates were three to five percentage points higher in states using a fiscal intermediary to process claims than in states where claims were processed by state agencies. Perloff and others (1987) also found that more prompt payment affected participation by physicians who limited their Medicaid caseloads.

Many states have undertaken efforts to reduce this administrative "hassle." In the Commission's survey, 31 states reported implementing electronic claims submission to simplify claims processing and speed up payment to providers. Seventeen states reported other methods, including using toll-free telephone "hotlines," simplifying billing forms and provider manuals, providing easy verification of eligibility information, and running workshops to assist physicians and their staff. Many states have also created special task forces to provide physicians with a formal voice on administrative matters. The federal government could encourage states to take additional steps by improving the funding match for administrative expenses. States already receive an enhanced match for management information systems. Another approach would be to create claims processing performance standards monitored by HCFA.

There is only limited evidence, however, that reducing the administrative burden without some improvement in Medicaid fees would be sufficient to induce many more physicians to participate (Yudkowsky and others 1990). When asked in the Commission's survey to rank seven reasons that physicians gave for not participating in Medicaid, 38 state Medicaid directors cited low fees as being one of the top two most important factors. By contrast, 14 states ranked complex billing, and only six states ranked payment delays as one of the two most important factors. It is also unclear how long it would take physicians to respond to such improvements.

Malpractice Relief. Physicians' willingness to accept Medicaid patients also appears to be affected by the escalating costs of professional liability insurance and the perceived frequency of malpractice suits. This section discusses the effects of problems associated with malpractice insurance on physician participation in the Medicaid program and considers possible responses to these concerns.

Effects of Malpractice. Malpractice appears to affect physician participation in the Medicaid program in two respects. First, physicians may be unwilling to accept patients when fee levels are so low that they do not cover the costs of liability insurance. This may be particularly true for obstetricians and family practitioners practicing obstetrics whose premiums increased more sharply than other physicians during the mid-1980s (Lewis-Idema 1988). In the Commission's survey, 20 state Medicaid directors cited the cost of malpractice premiums as one of the top two factors given by physicians for not participating in Medicaid; eight said the cost of liability insurance was the number one reason for low participation. In a 1987 National Governors' Association survey of state Medicaid and maternal and child health agencies, 84 percent of respondents reported that physicians "often" say they do not participate because public fees do not cover malpractice costs (Lewis-Idema 1988).

Since the cost of professional liability insurance does not vary by patients' insurance status, physicians treating only a few Medicaid patients should be able to cover these costs. But the proportion of professional liability costs to practice income may be too high for large Medicaid practices. To remain financially viable, physicians in such practices may have to choose either to reduce their Medicaid caseload or to eliminate high-risk services (for example, obstetrics) from their practice. Raising Medicaid fees would solve this problem.

The cost of liability insurance has also affected the supply of physicians practicing obstetrics. Physicians who continue to practice obstetrics may face sufficient demand for their services from private patients, so they may not take Medicaid beneficiaries. Raising fees could provide some relief for this problem, but fundamental medical malpractice reform may also be needed for high-risk specialties.

Second, many physicians assume that low-income patients with high-risk conditions are more likely to sue for malpractice. In fact, while it is true that low-income individuals, particularly pregnant women, tend to be at greater medical risk than their middle-income counterparts, empirical evidence suggests that the poor are actually less likely to sue for malpractice (McNulty 1989). This may be because the poor are less likely to assert their legal rights or to have access to legal representation.

Possible Remedies. States have tried a number of limited strategies to address the access problems resulting from malpractice issues, but little is known about the effects on physician participation in Medicaid. These strategies include providing liability coverage to physicians under contract with the state, state subsidization of liability premiums, and limits on liability for certain adverse outcomes. For example, in Virginia, physicians and hospitals who agree to pay fees into a compensation fund receive "no-fault" liability coverage for birth-related neurological injuries to newborns. Malpractice claims of Missouri physicians who contract with local health departments are covered by the state's Legal Expense Fund (Lewis-Idema 1988). The state of Texas also recently assumed liability for malpractice claims against physicians with at least 10 percent charity care (defined to include Medicaid) in a given year. Such physicians must carry their own liability insurance meeting certain standards but qualify for reduced premiums (Intergovernmental Health Policy Project 1990).

Medicaid patients appear not to pose a substantially greater liability risk to physicians than other patients. Therefore, creating programs to indemnify physicians against claims from Medicaid beneficiaries may be inappropriate. The Commission's analysis of medical malpractice reform (see Chapter 19) will inform its consideration of this issue for Medicaid.

MECHANISMS FOR REFORM

Reforming Medicaid physician payment could be mandated or it could be elective. Whether reforms are mandated or elective, financing them could be done by changing the Medicaid matching formula, implementing a buy-in option that would allow states to purchase Medicare coverage for Medicaid beneficiaries, or developing and strengthening grant programs to support specific projects.

Mandatory or Voluntary

The Congress could mandate or encourage state participation in Medicaid physician payment reform. Experience has shown that without mandates, state responses will be variable. The willingness of states to respond to voluntary mechanisms depends upon their fiscal ability and policy preferences. For example, under the Omnibus Budget

Reconciliation Act of 1986, states were given the option of receiving federal matching payments for covering all pregnant women and infants with incomes below the federal poverty level. Only 26 states exercised this option, however (U.S. Congress 1988). The Medicare Catastrophic Coverage Act of 1988 converted this option to a mandate, requiring all states to provide this coverage.

Well-designed mandates may be less complicated to implement than elective approaches and will produce a level of uniformity across states. Mandating reform, however, is likely to encounter opposition from states, because they are responsible for about 43 percent of Medicaid expenditures.[16] Recent federally mandated expansions in Medicaid eligibility and service coverage requirements, which increased state responsibilities, met with strong protests from the states and may have strained the budgets of some.[17]

Voluntary state participation in physician payment reform is less likely to encounter such state opposition. Voluntary programs with appropriate federal guidance may encourage states to address their unique local problems and provide valuable knowledge about alternative Medicaid physician payment reforms. Some of the policy options and financing mechanisms (for example, the buy-in discussed below) would require new legislative authority.

Financing Physician Payment Reform

Under either a mandatory or voluntary policy, there are at least three options for financing the reforms: (1) change the Medicaid matching formula, (2) allow states to purchase Medicare benefits for Medicaid beneficiaries through a buy-in option, and (3) develop grants to support specific projects that provide better access for Medicaid beneficiaries.

Changing the Medicaid formula to support reform in Medicaid physician payment would be most appropriate for fee options.[18] For example, the federal match for physician services could be set at a higher rate than other services. The disadvantage of this approach is that states might shift funds away from nonphysician services to obtain the higher matching rate. If this is to be avoided, the formula would have to be structured to limit changes that tighten eligibility, decrease rates of payment for other services, or reduce the number and types of optional services. Unfortunately, this approach would remove states' flexibility to respond to changes in patient needs, economic conditions, and health systems capacity.

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[16] In addition, 14 states require that local governments pay a portion of Medicaid expenditures.

[17] In August 1989, the governors passed a resolution asking for a freeze on the enactment of Medicaid mandates for two years. The governors proposed to use this period to find solutions to the health care crisis. The Administration supports the freeze.

[18] A criticism of the current formula is that while it gives a higher matching rate to poorer states, these states do not have the tax capacity to take advantage of the expanded federal support. The General Accounting Office recently proposed replacing the current formula, based on per capita income, with a more equitable formula based on total taxable resources and the number of people in poverty (GAO 1990b).

It might be appropriate to create a sliding scale with larger incentives for states in which fees are the furthest from the target payment. This would concentrate limited expenditures on the worst situations but would likely lead to strong opposition from those states with higher fees.

In designing the formula, a decision must be made about whether to encourage states to set payments at a specific level (for example, 80 percent of the Medicare Fee Schedule amount) or to increase fees currently below the Medicare Fee Schedule by a fixed percentage or amount. Using a formula that rewards states for paying at specific levels treats all states similarly and eliminates the current variation across states in Medicaid fees. This approach, however, rewards some states for current payment levels, increasing federal expenditures where federal goals have already been achieved.[19] By contrast, while encouraging states to increase fees by a fixed percentage or amount better targets federal expenditures, wide variation in state fee levels could remain.

A second alternative is to allow states to buy-in to Medicare Part B coverage for all Medicaid beneficiaries. Currently, 49 states buy Medicare coverage for categorically needy beneficiaries who are eligible for Medicare; 23 states buy Medicare coverage for the medically needy eligible for Medicare. All states are required to purchase Medicare coverage for Qualified Medicare Beneficiaries.[20]

Under a buy-in approach, the federal government would administer benefits for covered Medicaid beneficiaries and pay physicians at Medicare rates. Medicare would become the primary payer for Medicaid beneficiaries, providing uniformity across states in physician payment methodology and fee levels. Total expenditures for physician services under a buy-in would therefore increase by the same amount as the option of raising Medicaid fees to Medicare levels.

States would provide wraparound coverage for mandatory Medicaid services not covered by Medicare such as prescription drugs, routine dental services, and eyeglasses. It might be desirable to require that payment levels for these services be resource-based.

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[19] It might be possible to blend these two approaches, by encouraging states either to meet national payment goals or to increase current fees. For example, a state would receive the new matching rate if it either increased fees by a specified percentage or its fees are at the target payment level. This blended approach would have the same disadvantages as the approach that encourages states to meet national payment goals.

[20] Qualified Medicare Beneficiaries have incomes below the federal poverty line and receive Medicaid payment for Medicare cost sharing expenses. They do not receive other Medicaid benefits.

States could be given continued discretion about coverage for the medically needy. If this were the case states exercising the buy-in option for the categorically needy but not the medically needy would continue to pay physicians under Medicaid rules for services delivered to those Medicaid beneficiaries not covered by the buy-in. This situation will exist unless states are required to include all Medicaid beneficiaries under the buy-in option.

There are two ways to structure a buy-in option, both of which would effectively raise Medicaid fees to Medicare fee schedule levels.[21] Under the first, states would pay only the Medicare Part B premium, deductible, and coinsurance for Medicaid beneficiaries. Federal dollars currently used to match state Medicaid expenditures would partially finance this option. Additional federal revenues, however, would be needed to cover the remaining costs.

This buy-in option would effectively federalize the physician services component of state Medicaid programs. While there are merits to this approach, it has implications beyond the scope of the Commission's mandate. For example, it raises the issue of whether the federal government should operate two separate health care financing programs. It also questions the traditional federal-state relationship in financing and operating the Medicaid program.

Under the second method of structuring a buy-in, states would pay the deductible, coinsurance, and a portion of the actuarially determined premium for different eligibility groups (for example, children receiving benefits under the Aid to Families with Dependent Children program) for their Medicaid beneficiaries. State and federal portions of the premium could be based on state per capita income using each state's current Federal Medical Assistance Percentage (FMAP).[22]

The major advantage of either buy-in approach would be to raise Medicaid fees to Medicare levels and, after the implementation of the Medicare Fee Schedule, to incorporate the advantages of the resource-based relative value scale. Higher fees and the resource-based fee schedule may increase access to more appropriate care for Medicaid beneficiaries. It would also reduce the administrative burden on physicians because both programs would use the same methodology and the claims would be processed by the same carrier.

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[21] If the federal government adopted either expanded buy-in option, a decision about whether it would be desirable to standardize the scope and duration of covered physician services in all Medicaid programs should be made.

[22] The FMAP is equal to 100 percent minus the state share. The state share is the ratio of the state per capita income to the national per capita income times 45 percent. The FMAP may be no less than 50 percent nor more than 83 percent.

There are disadvantages to the buy-in, however. Poor children and nonelderly adults constitute about 70 percent of Medicaid beneficiaries and require different types of services than Medicare beneficiaries. The buy-in option would require that Medicare develop payments and payment rules for services that are seldom provided to Medicare beneficiaries, such as deliveries.

Finally, project grants could be used to finance Medicaid physician payment reform. Project grants are most appropriate for the start-up costs necessary to expand the capacity of community health centers, hospital outpatient departments, and maternal and child health clinics. Grants would also provide a way to finance the development of administrative procedures that improve claims processing and reduce administrative burdens.

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CHAPTER 17

IMPROVING ACCESS TO HEALTH SERVICES IN RURAL AREAS

A number of problems constrain access to health care for residents of rural areas. Although each rural community typically encounters a unique set of problems, there are some interrelated circumstances that broadly characterize rural health care delivery. Among these are shortages of health professionals, facility closings, and a lack of insurance among many rural residents. This chapter provides an overview of these problems, setting the context in which the Commission will expand its efforts to improve access to rural populations.

A primary concern in rural areas is the shortage of health professionals. Many attribute this to the manner in which physicians and other health professionals are trained, as well as the financial and other disincentives of practicing in small, remote communities. Because of the interdependency between health professionals--particularly physicians--and hospitals, the increasing number of rural hospital closures further hinders attempts to increase their supply. In addition to making it difficult to recruit physicians, a hospital closing within a community may lead to restricted access to critical services, such as emergency care.

Access to care is further limited due to the relatively large percentage of the rural population that is uninsured. A patient base that is poorer with less health insurance coverage places greater financial demands on providers, which in turn intensifies the difficulties communities experience in recruiting and retaining health care personnel and keeping hospitals viable.

The Commission places a high priority on increasing access to physician services in rural areas. It recommended bonus payments for physicians practicing in Health Manpower Shortage Areas[1] in its first report to Congress. In 1989, the Commission proposed adoption of a resource-based fee schedule that would further improve payments to rural physicians, particularly those who are oriented toward primary care. Both measures were subsequently enacted by the Congress.

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[1] Health Manpower Shortage Areas are now referred to as Health Professional Shortage Areas.

The Commission has made efforts to ensure that payments to rural physicians under the Medicare Fee Schedule will accurately account for their costs of practice. In Chapter 5 the Commission recommends a payment area configuration that adequately captures differences in input prices across geographic localities. It has recently completed its work to validate the ability of the measures used to construct the geographic adjustment factors (GAFs) to account for relative differences in input prices faced by urban and rural practices (see Chapter 5). The Commission's analyses conclude that the GAFs appear to sufficiently measure differences in input prices and that there is no apparent bias against rural practitioners.

Medicare fees that accurately reflect geographic price variations cannot alone be expected to improve physician supply in underserved rural areas. Other measures, such as the Health Professional Shortage Area (HPSA) bonus payment, may also be needed to accomplish this goal.

In addition, GAFs cannot be expected to account for the extra costs incurred by many rural practices due to underutilization of equipment. In Chapter 3 the Commission recommends that "payment for equipment cost of a service should be based on a volume level for the service that is realized in efficient practices; however, it recognizes that the use of alternative volume assumptions may be necessary in geographic areas where an efficient rate of equipment use is not consistent with access to care." In other words, for equipment that facilitates the provision of primary care, such as X-ray machines and electrocardiograms, an adjustment to the fee may be appropriate in certain cases to compensate for less-efficient rates of utilization. Although this kind of an adjustment will eliminate a bias in the fee schedule against physicians in remote areas, an increase in the fee will not be significant enough to increase physician supply dramatically in these areas. Again, the HPSA bonus payment may be the more appropriate mechanism to address access problems.

As the Commission extends its work beyond Medicare physician payment, it can address other important dimensions of the rural access problem. Through its work on Medicaid physician payment, it can seek to foster rural physician participation in the Medicaid program and broader coverage for the rural poor. Through its work on graduate medical education issues, the Commission can develop policies to support residency training programs that could potentially increase physician supply in rural areas. Reforms in these two areas could bolster the financial base to support a rural practice while producing the physicians to actually establish the practices.

The Omnibus Budget Reconciliation Act of 1990 (OBRA90) provides additional opportunities for the Commission to address the needs of underserved populations. The legislation expands the Commission's mandate to consider payment incentives to increase access to physician services in large urban and rural areas, including policies regarding physician payment under Medicaid. Although the Commission over the past year has focused on the rural underserved, it recognizes that some of the inadequacies of rural health care delivery systems are also common to inner cities. In the coming year, the Commission will analyze additional measures to improve access for the underserved regardless of geographic location. It will also address in more detail the problems unique to large urban areas.

The rest of this chapter presents a synthesis of the research on access to care in rural areas, including the characteristics of rural populations, the supply of health professionals, and the role of hospitals and other clinical facilities in rural communities. It also describes the federal programs directed toward correcting problems in the financing and delivery of rural health services. Finally, it outlines the Commission's work plan to consider payment options for expanding patient access in rural areas.

CHARACTERISTICS OF RURAL AMERICA

The challenge of delivering health care in rural areas is best understood within the framework of the demographic and socioeconomic characteristics of rural America.[2] Rural residents occupy three-quarters of the land mass, yet constitute only one-quarter of the U.S. population, translating into a very low population density. Rural persons account for a disproportionate share of older and poorer people. Furthermore, compared with urban and suburban dwellers, they are more likely to suffer from disabilities and chronic conditions and are less often insured by private health plans. Beyond this general profile, it is important to recognize there is widespread geographic and economic diversity among rural areas.

The Elderly and Poor Segments of the Rural Population

On average, the proportion of elderly in a community is greater the less densely populated, or more rural, an area is. According to 1980 Census data, the elderly comprise 10.7 percent of the metropolitan population, while they account for 13.0 percent of the nonmetropolitan population (U.S. Department of Commerce 1981). A similar relationship exists for the poor: The percentage of the metropolitan population below the poverty level in 1985 was 12.7 percent compared with 18.3 percent in nonmetropolitan areas (U.S. Congress 1988). Rural America, with a quarter of the population, contains 38 percent of the poor (Joint Task Force 1988).

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[2] Throughout this chapter, the term "rural" in most cases refers to areas outside of metropolitan statistical areas.

There is evidence that rural America's share of the elderly and impoverished is growing. On the basis of preliminary 1990 Census reports (Ford 1990) and data from the U.S. Department of Agriculture (Beale and Guguitt 1989), there has been an exodus of people from rural areas, with those remaining more likely to be older and poorer. Although some argue that a diminishing population requires fewer health care resources, this may not be the case when those who remain represent the segments of the population with the greatest health care needs.

Health Indicators

The health status and extent of health insurance coverage of rural residents reflect what is generally associated with a more financially disadvantaged and aging population--that is, poorer health and less ability to afford private health insurance. The rate of chronic disease in the rural population is 23.4 percent versus 18.7 percent in the metropolitan population. In addition, the incidence of motor vehicle accidents and drownings is disproportionately higher in rural areas (HHS 1986b).

The percentage of uninsured within the rural population exceeds that of the urban population--14.5 percent compared with 12.3 percent (Norton and McManus 1989).[3] Moreover, the rural population contains a large share of beneficiaries in the Medicare and Medicaid programs,[4] whose payments to providers are typically lower than other payers.

The demographic and socioeconomic profile of rural America describes a population with a greater-than-average need for health care services and a less-than-average ability to pay for these services. Clearly, a population that is older and more impoverished with somewhat poorer health status can potentially put significant strain on a health care system and its resources.

Diversity in Rural Areas

Population descriptors do much to characterize rural America; but when examining rural health policy options, aggregate statistics should not overshadow the fact that rural America is extremely diverse. One major difference among rural areas is the extent of their geographic isolation or underpopulation. In 1980, for example, the smallest nonmetropolitan county in the United States contained only 91 people, while the largest had 155,435 (Cordes 1989). For more isolated areas, distance may represent "the most formidable barrier" to the development of health programs (Parkinson 1981). Hazardous travel conditions resulting from poor roads and inclement weather, as well as inadequate or nonexistent means of transportation, often compound matters. It is not uncommon for residents of frontier counties--the most rural of counties, with population density of six or fewer persons per square mile--to travel for more than an hour to reach a health care practitioner or facility (U.S. Congress 1989a).

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[3] When taking into account only those under the age of 65, the figures are 16.6 percent and 13.6 percent, respectively.

[4] In 1985, Medicare and Medicaid accounted for 31 percent of the payments for physician visits in rural areas and only 22 percent in urban areas (Norton and McManus 1989). In addition, rural hospitals treat a substantially larger proportion of Medicare patients than do urban hospitals (Moscovice 1989; U.S. Congress 1990b).

The economies of rural communities are also diverse, with many dependent on farming or manufacturing and others dependent on mining or federal projects (Cordes 1989). Some rural communities are flourishing; others are not. For those experiencing an economic downturn, consequences include less health insurance coverage for residents as a result of unemployment and an inability of struggling small businesses to afford health insurance for their employees. Another ramification of a poor local economy is a lower tax base with which to subsidize local hospitals (ProPAC 1987).

Health care delivery systems must be responsive to rural diversity stemming from differences in geographic isolation, local economies, or other factors.

ACCESS TO PHYSICIAN CARE

The most frequently raised concerns regarding the provision of rural health services center around a shortage of health professionals, particularly physicians. As early as 1921, the *Journal of the American Medical Association* cited an imbalance of physicians between rural areas and cities (Seipp 1985). Since then, numerous attempts to alter this imbalance have been made and, although maldistributions still exist, there is evidence of some improvement.

Overall Improvements

Over the past 15 years, the gap in access to medical care between urban and rural populations has closed substantially, as large numbers of nonmetropolitan counties have gained physicians (Freeman and others 1987; Kindig and Movassaghi 1989; Langwell and others 1985 and 1987; HHS 1983). In fact, research shows that by 1979 almost every town of more than 2,500 had ready access to a physician (Newhouse and others 1982b) and that the number of specialists in rural areas was increasing (Schwartz and others 1980). In addition, rural residents were closer to all medical specialties; 96 percent of the population studied was within 15 miles of a physician by 1979 (Williams and others 1983). The percent of small towns with access to a surgeon also increased, doubling over the period 1960-1977 to 38 percent (Schwartz and others 1980).

Improved access to physician care during the 1970s was due primarily to the increase in total U.S. physician supply. In 1980, the report of the Graduate Medical Education National Advisory Committee (GMENAC) predicted an oversupply of physicians by the year 2000. Such projections raised expectations that physicians would continue to move into rural areas as competition to practice in urban centers increased. To a large extent, diffusion has occurred (Newhouse and others 1982a; HHS 1983), particularly in nonmetropolitan areas that are perceived as most attractive to physicians because of a growing population and economy, proximity to a metropolitan area, and sufficient health resources (Hobbs and Nahlik 1984; Langwell and others 1985). Much of the improvement in access has been limited to these larger nonmetropolitan areas, while many of the more underpopulated rural areas continue to experience shortages.

Existing Maldistributions

Clearly, there are still unmet health care manpower needs and significant disparities among geographic areas. The uneven distribution of physicians among urban and rural localities is explained somewhat by the concentration of specialists in urban areas, where resources exist for the practice of more technically sophisticated medicine. It is not unreasonable to expect rural residents to seek certain forms of treatment in urban medical centers. Nonetheless, most would argue that the current distribution of physicians is still unacceptable. Only 12 percent of physicians practice in rural areas, where 25 percent of the nation's population resides (AMA 1986). Even within nonmetropolitan areas there are stark imbalances: In 1985, the physician-to-population ratio for all nonmetropolitan counties was 98 to 100,000, while the ratio for the most rural nonmetropolitan counties (population < 2,500)[5] was a mere 30 to 100,000 (Kindig and Movassaghi 1989).

Rural and urban areas with a population-to-primary care physician ratio greater than 3,500 to 1 (about 29 primary care physicians per 100,000 population) may qualify as Health Professional Shortage Areas. The Department of Health and Human Services (HHS) identified 1,935 primary care shortage areas in December 1989, 69 percent of which are in rural areas (HHS 1989). More than 1,800 physicians are needed to remove the HPSA designation in these rural areas (HHS 1986a). Based on indications that the physician-to-population ratios in rural areas have stabilized or are declining, it may be difficult to meet these manpower needs (Dennis 1988; Fickenscher 1990). In addition, there are simply some areas that may never be able to retain physicians on a permanent basis (DeFriese and Ricketts 1989; Kindig and Movassaghi 1987). Perhaps a more important goal for such areas would be to maintain a practice in the community, regardless of the physician turnover that occurs within it. In order to ensure that a primary care practitioner is available to serve in the practice, organized recruitment and retention programs will continue to be necessary (Crandall and others 1990; Hobbs and Nahlik 1984; Kindig and Movassaghi 1989; HHS 1990a).

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[5] These counties account for 12 percent of the total nonmetropolitan population of 63 million (U.S. Congress 1989a).

Specific Manpower Concerns

The geographic maldistribution of physicians can be better understood by examining the specific manpower needs of rural populations. Physician shortages in primary care, obstetrics, and surgery deserve attention.

Primary Care. Primary care physicians, including family physicians, general internists, and osteopaths, account for a much larger proportion of physicians in rural parts of the country than in urban areas (HHS, forthcoming). The prevalence of primary care physicians in rural areas is explained by the fact that they are perhaps most capable of meeting the needs of communities that can only support a limited number of physicians (Spencer and D'Elia 1986).[6] Accordingly, an adequate supply of primary care physicians is critical to rural areas. Yet while non-primary care specialties across the country expanded by 160 percent from 1963 to 1986, the number of primary care specialists grew by only 40 percent. Additionally, the combined number of family and general practitioners in absolute terms is on the decline (Rodos and others 1990).

An increasing number of specialists are substituting as providers of primary care in rural areas (Williams and others 1983). There are questions, however, concerning the cost effectiveness of highly specialized physicians practicing primary care medicine and the ability of specialists to practice the broad range of medicine often required in rural areas.

Obstetrical Care. Obstetrical care is one of the most vulnerable health services in rural areas. Many family and general practitioners, who provide the majority of obstetrical care in rural areas (Crouse 1989; Gordon and others 1987; Rosenblatt and Detering 1988), are terminating the obstetric portion of their practice, and their services are not being replaced (Rosenblatt and others 1990a; Smucker 1988). Many obstetricians and certified nurse midwives have also discontinued deliveries (Gordon 1990). The price of professional liability insurance contributes significantly to this decision (Joint Task Force 1988; Rosenblatt and others 1990b).

Some discussion has occurred about whether family physicians and rural hospitals can provide quality obstetrical care. Studies have found that their services are of high quality (Kriebel and Pitts 1988; Nesbitt and others 1989); nevertheless, there appears to be a trend toward obstetrics becoming a referral specialty, dependent upon urban hospitals (Langholz and Ricketts 1989). This may be due more to a shortage of local obstetrical providers than to quality concerns or patient preferences.

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[6] In addition, specialists are not as prevalent because, as mentioned previously, rural patients generally travel to urban areas when a specialist is needed.

Surgical Services. Some rural communities are also experiencing shortages of surgeons, and as a result there seems to be a resurgence in the use of itinerant surgeons (Glenn and others 1988).[7] Itinerant surgeons move from one community to another, operating on scheduled elective patients who are then left to the care of the local physician. Although viewed by some as necessary in certain areas, others oppose the practice. They believe postoperative care should be provided by the surgeon rather than the local primary care physician (Moscovice 1989).

Barriers to Practicing in a Rural Community

A variety of circumstances makes it difficult for rural communities to attract and retain physicians, whether it be family physicians, obstetricians, or surgeons. New physicians often decide against establishing a practice in a rural area because of the large debts they incur in medical school. A primary care practice in a rural area typically generates a lower income than an urban, specialty-based practice, making it more difficult to repay educational loans (McIlrath 1990c). Another disincentive is the relative scarcity of employment opportunities for spouses, educational options for children, and social and cultural activities.

Although these personal considerations carry weight, professional concerns--specifically a lack of health care resources such as hospitals, nonphysician services, and opportunities to work in a group practice--appear to exert the most influence on a physician's practice location decision (Bauer 1989; Carpenter 1982; Movassaghi and Kindig 1989; Rosenblatt and Detering 1988; HHS 1986a). One study found that retention of a surgeon in a rural area requires a local hospital, five to seven potential referring physicians, and a population of 10,000 or more (Glenn and others 1988).

A lack of health care resources contributes to the professional isolation that many physicians face in rural areas. Physicians in solo practices are especially sensitive to isolation. Moreover, a solo practice often means longer hours,[8] fewer opportunities to take vacations or to pursue continuing medical education, and an increased chance of burnout (U.S. Congress 1988). Although rural physicians are more likely to be solo practitioners than their urban counterparts (HHS, forthcoming), rural physicians are increasingly forming partnerships or joining group practices to overcome some of the hardships. In fact, a partnership, even with a nonphysician practitioner, is viewed by many as crucial for a viable rural practice (Bauer 1989; Higgins 1989). Other physicians, as a more temporary solution, hire a locum tenens to manage their practice while they vacation or attend a continuing medical education course (McIlrath 1990c).

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[7] Specialty care is more frequently being provided in an itinerant manner as well (U.S. Congress 1990b).

[8] Long hours and heavy workloads are common to rural physicians, whether solo or not. Data from the American Medical Association show that rural family physicians work an average of 51 hours and see 157 patients per week. Urban family physicians, on the other hand, average 47 hours and 124 patients (Higgins 1989).

As a result of the various obstacles rural physicians confront, many eventually migrate to larger towns or cities. A survey of rural physicians in Utah and Minnesota found that 70 percent and 48 percent, respectively, were considering leaving their communities (McIlrath 1990d). Rural physicians as a group are older than urban physicians. Many are nearing retirement, which will have consequences on the future supply of rural practitioners. It is thought that across the country, as many as 25 percent of physicians in counties of fewer than 10,000 people may retire or migrate by 1994 (Kindig and Movassaghi 1989).

Medical Education

Efforts to increase physician supply in rural areas may have to originate with changes in medical education, beginning with the medical school selection process. A large body of literature suggests that students with small town or rural roots are more likely to return to a similar community upon completion of their medical training (Head and Harris 1981; NRHA 1990b; Rhodes and Day 1989; Stefanu and others 1980). Ethnic minorities are also more likely to practice in underserved areas, both rural and urban, as well as to enter primary care (Rhodes and Day 1989; Rodos and others 1990). It is significant that over the past decade, the number of students with small-town backgrounds has diminished by as much as one-third across the country (McIlrath 1990c; Rabinowitz 1988a), and the percentage of blacks enrolling in medical school has not increased since the mid-1970s (Crandall and others 1990).

Some medical schools have instituted a selective admissions process to target students who are more inclined to practice in underserved areas. Jefferson Medical College in Philadelphia is one example. A study found that the students the college selectively admitted from rural areas were three times more likely than other students to return to similar locations upon completion of their medical training (Rabinowitz 1988b). The School of Medicine at the University of Minnesota-Duluth has also established a record of graduating students into rural practice and family medicine through a selective admissions process. Nearly 53 percent of its students have chosen to practice family medicine, and 41 percent of its graduates have set up practices in communities of fewer than 20,000 (Boulger 1990).

The achievements of the School of Medicine at the University of Minnesota-Duluth can also be attributed to its rural preceptorship program in which all students are required to participate. Research confirms that rural rotations for medical students and later for residents encourage students toward a rural practice (Asher and others 1984; Denton and others 1989; Stefanu and others 1980; Gessert and others 1989). Another study suggests that a rural training setting may simply reinforce a predisposition to practice in a rural area (Glenn and Hofmeister 1981).

In addition to rural preceptorships, many advocate a classroom curriculum that integrates the provision of medical services to rural patients (Bruce 1985; Stefanu and others 1980). Incorporating the unique aspects of rural practice into medical training--both in the classroom and through contacts with rural physicians--prepares those who have already chosen to practice in a rural location for the challenges they will face, such as practicing a broad scope of medicine with limited resources. Exposure to rural medicine may also spark the interest of students or residents who have not yet considered a rural practice.

ACCESS TO HOSPITAL CARE

Hospitals play an essential role in attracting and retaining physicians in rural communities (Bauer 1989; Carpenter 1982; Movassaghi and Kindig 1989; Ricketts and Guild 1983; HHS 1986a). For many physicians, a nearby hospital is a prerequisite for deciding where to establish a practice. A hospital enables them to provide a wider range of services to their patients and to practice in a manner to which they have grown accustomed in their medical training. A supply of physicians is also crucial to the viability of a hospital (McIlrath 1990a), so much so that rural hospitals often actively recruit physicians (Lutz 1987). There is clearly an interdependency between the two, although competition among them for providing X-ray, laboratory, and other outpatient services may be strong (DeFriese and Ricketts 1989; Mullner and McNeil 1986).

The Financial Status of Rural Hospitals

In recent years, more attention has been given to the interdependence between physicians and hospitals. The financially precarious situation of many rural hospitals, which has led to an increasing number of closures, may detrimentally affect access to physicians and other health care professionals (McIlrath 1990b).

From 1985 to 1988, 260 hospitals closed, half of which were in rural areas. The closure rate of rural hospitals during this time was 29 percent higher than that of urban hospitals (GAO 1990a). In 1988, 600 of the remaining 2,700 rural hospitals were reportedly in danger of closing over the next few years (U.S. Congress 1990b). A prime reason for such a high number of closures is that rural hospitals have had trouble adapting to the new health care environment, which includes the prospective payment system (PPS),[9] new medical technology, and a decrease in demand for inpatient services (HHS 1987; GAO 1990a).

The small size of rural hospitals, as measured by the number of beds, is also a factor in closures (AHA 1987; Guterman and others 1988), as are low occupancy rates. In fact, an analysis of rural and urban hospitals that closed between 1985 and 1988 found that small size and a low occupancy rate, more so than location in a rural area, render a hospital more susceptible to closure (GAO 1990a). As a group, rural hospitals are one-third the size of urban hospitals, and over recent years they have experienced a large decline in occupancy rates, with the average rate falling from 69 to 56 percent over the period 1980-1985 (Moscovice 1989). Rural hospitals, thus, have characteristics that make them more financially vulnerable than most urban hospitals.

The importance of a hospital to a rural community extends beyond its role as a provider of health services. A local hospital is often a sustaining force in the local economy--as a major employer and from the standpoint of its ability to attract new businesses (Doeksen and others 1990). Not surprisingly, rural hospitals often have strong community support to stay open. Frequently, a local government will subsidize the community hospital through property taxes or other special taxes (Mullner and McNeil 1986; Nichols 1990). Due in part to such support, public hospitals in rural areas are more resilient than those with other types of ownership: They are eight times less likely to close than rural for-profit hospitals (GAO 1990a).

Despite the strong commitment of most communities to their local hospital, it may not be feasible for certain struggling rural hospitals to remain open. When residents are within reasonable distance of an urban hospital or a larger rural hospital, it is not necessarily undesirable to allow competition from larger hospitals to bring about closure of underutilized facilities (Mullner and McNeil 1986).

Most hospitals that have closed in recent years have been small and underutilized; their closures do not seem to have hampered access to emergency and acute care (U.S. Congress 1988). Often, residents have already chosen a new source of care, and therefore the effect of closure is minimal. In fact, more and more rural residents are bypassing their local hospital, and even their local physician, to receive care in a larger rural or urban facility (Bronstein 1990; Jensen and Hictbrink 1987; Kane and others 1978). Wealthier and younger patients are more likely to bypass the local hospital, which results in rural hospitals treating a majority of the poorer, sicker, and older residents within the community (U.S. Congress 1990a). Reasons given for bypassing local providers include unavailability of certain specialists and services, referral by a local physician, and quality concerns (Moscovice 1990; Kusserow 1990b).

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[9] Many argue that rural hospitals are reimbursed at inadequate rates under PPS. Their standard payment is about 8 percent lower than that of urban areas (Culp 1990), and the area wage index used in the PPS formula is also lower for rural hospitals, even though they often compete for labor within an urban market (ProPAC 1987). By the fourth year of PPS, most rural hospitals were losing money on their Medicare patients; urban hospitals continued to make a profit, though less than before PPS. Nonetheless, it was found that rural hospitals that closed between 1985 and 1988 actually made more money, or lost less, from Medicare patients than their other patients. Thus, a high proportion of Medicare patients does not appear to be associated with closure (GAO 1990a). The Prospective Payment Assessment Commission reported a similar conclusion from one of its studies (ProPAC 1990), as did the Inspector General (Kusserow 1990a). (OBRA90 calls for the standard payment differential to be phased out by 1995, which should benefit rural hospitals somewhat.)

Hospital closure at times raises concerns about access (Rosenbach 1990). One study found that one year after the closure of a local hospital, patients with no regular source of care increased from 14 percent to 28 percent. There was also a decline in the health status of these patients (Bindman and others 1990). A study by the Inspector General (Kusserow 1990a) found that emergency and inpatient care is within a reasonable distance--20 miles--for most of the communities whose hospitals closed in 1988. Yet a companion study (Kusserow 1990b) found that closures within communities where the nearest hospital is more than 10 miles away led to perceived access problems. Of the surveyed residents, 40 percent reported that they face serious problems obtaining hospital care due to closure of the hospital.

Because of the unique circumstances of each community, the closure of a hospital will affect each community in a different way. Some have proposed that essential hospitals whose closures would lead to actual access problems be identified and various forms of federal assistance be targeted toward preventing their closure (Hadley and Zuckerman 1990; Kusserow 1990b; National Advisory Committee 1989; NRHA 1989; U.S. Congress 1990a).

Efforts to Remain Viable

Rural hospitals have adopted numerous strategies in an attempt to improve their financial stability and the quality of their services. Affiliation with a larger hospital is one example. Through an affiliation, a rural hospital guarantees referrals to a single urban-based hospital in exchange for services such as periodic visits by specialists, continuing medical education, and administrative support (Moscovice 1989). Still other rural hospitals enter into cooperative agreements with one another. Cooperatives encourage the sharing of equipment, administrative tasks, and marketing in an effort to avoid duplication (U.S. Congress 1990a).

Diversification is another means by which rural hospitals maintain viability. Many have expanded into long-term care, psychiatric, and substance abuse services (Rowland and Lyons 1989). Under the Health Care Transition Grant Program, the Health Care Financing Administration (HCFA) has funded approximately 200 hospitals to support diversification and other projects that will improve long-term financial stability (Cheh and others 1990). The Affordable Rural Coalition for Health, a demonstration project funded by the Kellogg Foundation, also seeks to help rural hospitals make the transition from providing only acute care services to becoming comprehensive health care centers. An emphasis is placed on community participation, diversification, and the formation of cooperatives and affiliations.

Rather than expanding, some hospitals benefit from limiting their services. At least six states have passed licensure authorization to permit certain rural facilities to offer a more restricted set of services than a typical hospital (Wellever and McCarty 1989). HCFA is currently conducting a demonstration in Montana to explore one version of a limited service hospital, called a medical assistance facility (MAF). The MAF licensure designation allows hospitals that cannot meet current licensure requirements to continue providing inpatient care to those awaiting transportation to a hospital or those requiring fewer than 96 hours of care (Christianson and others 1990).

Regionalization is another rural hospital strategy that has received much attention. Regionalization pertains to the idea of consolidating the delivery of certain services such as high-risk obstetrics, trauma, burns, and cardiac care in a central, specialized hospital. A key aspect of regionalization is the establishment of formal channels to refer patients from rural areas to larger medical centers. The premise is that certain rural hospitals or clinics do not have the volume to provide complex services in a cost-effective manner. There is also evidence that a certain amount of volume is necessary to maintain quality of care (Luft and others 1979; Roberts and Cretin 1981; Shortell and LoGerfo 1981). Therefore, some argue that it is rational to restrict the provision of certain services to large regional centers. Regionalization has proven successful in rural areas (Hein 1977, 1978, 1986; Rosenblatt and others 1985).

ACCESS TO OTHER HEALTH SERVICES

Hospitals and physicians in fee-for-service practices typically comprise the framework of a health services system; however, in rural areas where access to both may be limited, other sources of care take on added importance. Nonphysician health professionals and emergency medical services systems are two sources on which many rural areas rely heavily. The health maintenance organization (HMO), as an alternative approach to organizing the provision of physician and hospital services, also plays a role in the delivery of care to rural populations. Finally, large multispecialty group practices with satellite clinics are becoming more common in rural areas.

Access to Other Health Professionals

In many rural communities, patient volume is insufficient to support a physician practice. Nonphysician practitioners, such as nurse practitioners (NPs), physician assistants (PAs), and certified nurse midwives (CNMs), offer a cost-effective alternative. They are capable of meeting a majority of the primary care needs of rural residents and typically prove to be a more permanent part of the community than physicians (U.S. Congress 1986; University of North Carolina 1985).

The PA and NP professions arose in large part to meet the perceived health care needs of underserved rural and urban populations; consequently, from the beginning both professions were very active in rural areas (U.S. Congress 1988). More recently this has changed. In 1988, only 16 percent of NPs were located in rural areas, down from 22 percent in 1977 (U.S. Congress 1990a, 1990c). In 1989, 20 percent of PAs practiced in rural communities (AAPA 1990) compared with 27 percent in 1981 (U.S. Congress 1990c). Expanding opportunities in urban practice sites such as hospital, industrial, and managed care settings explain some of this decline. For those PAs and NPs who remain in rural areas, state practice acts often hinder their effectiveness. For example, many states do not grant them prescription authority or allow them, in the case of PAs, to practice without direct supervision of a physician. Some rural areas also lack physicians who are willing and able to employ and supervise nonphysician practitioners.

In an attempt to increase the number of nonphysician practitioners in rural areas, the Congress included in OBRA90 authorization of Medicare direct payment for NPs and certified nurse specialists in rural areas. To further improve access to their services, the Commission recommends in Chapter 10 that nonphysician practitioners in HPSAs be paid a Medicare bonus payment of the same percentage that physicians in HPSAs currently receive.

Along with shortages of nonphysician practitioners, rural communities face shortages of nurses and dentists (U.S. Congress 1990a). Mental health workers and long-term care personnel and therapists are also in short supply in rural areas and will continue to be so as demand for their services grows (Beisecker 1990; Stone 1990).

Access to Emergency Medical Services

With the long distances that often separate those in rural areas from the nearest hospital, adequate emergency medical services (EMS) are essential to any rural health system. Volunteers comprise a large portion of EMS manpower in rural areas (Foulk and Ryan 1989). Additional support for EMS systems comes in the form of state and local government funds and a small amount of federal block grant money. For many EMS systems these funds are insufficient to replace outdated transportation and communication equipment, to train volunteers properly and provide them with incentives that increase retention, and to support specialized EMS personnel who are qualified to provide advanced life support (U.S. Congress 1989b; GAO 1986). Moreover, many rural areas do not have access to a 911 emergency telephone number nor do their states have a coordinated regional approach to deliver patients to trauma centers (U.S. Congress 1989b).

Access to Alternative Delivery Systems

Two final components of rural health care delivery systems worth noting are health maintenance organizations and regional satellite networks. Although HMOs have existed in various forms in rural areas for many years, their numbers have never been substantial. There were, however, notable increases in the 1980s: In 1981 there were 79 rural HMOs in 29 states, and three years later there were 118 in 34 states (Christianson and others 1986a). Most HMOs operating in rural areas are extensions of urban-based HMOs; rural-based HMOs have met with less success (Christianson and others 1986b; Phillips and Associates 1980). The extension of an HMO into a rural community is generally viewed as advantageous to a rural health system. In particular, the HMO may attract physicians to an area because of its ties to an urban medical center (Paley and Bickman 1979) and because it provides a stable and predictable source of income (Christianson 1989).

Some multispecialty group practices have built networks of practitioners in rural areas through the establishment of satellite clinics. Though few in number, they serve as a promising model for rural health care delivery. A network creates a mutually beneficial relationship between the main clinic and its satellites. To ensure the viability of the satellites, the group practice typically pays physicians a salary or a salary supplement to compensate for the lower income generated in many rural practices. In addition to financial support, the physicians in the satellites have access to professional consultations through their ties with the main clinic. The main clinic, in turn, benefits from the referrals of the physicians practicing in the satellite clinics.

The Marshfield Clinic[10] in Wisconsin is in the beginning stages of a federally funded evaluation of regional satellite networks. Over the next year, Marshfield plans to study clinics in various parts of the country that have established networks in order to determine the advantages and drawbacks of such systems. The researchers also plan to address how Medicare's payment policies might affect the development of networks.

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[10] This multispecialty group practice has a staff of 265 physicians who practice at the Marshfield site and an additional 54 physicians who practice in 17 regional satellite clinics. Of the 17 satellites, 14 are in communities that range in size from 1,150 to 4,500 residents (Wenzel 1989).

FEDERAL SUPPORT OF RURAL HEALTH SYSTEMS

The federal government has committed a significant amount of resources in the form of categorical programs and payment strategies to address the problems confronting rural health systems (Horner 1988). Over the past few years, federal interest in rural health care has been especially strong. Since the mid-1980s, the Congress has introduced more than 50 bills on rural health and has formed the Senate Rural Health Caucus and the House Rural Health Care Coalition. The Administration has also been active, establishing an Office of Rural Health Policy and a National Advisory Committee on Rural Health.

Early Initiatives

Major federal efforts aimed at improving the health of rural populations were initiated in the 1960s with the funding of neighborhood health centers. The Rural Health Initiative Program and Health for Underserved Rural Areas soon followed. (The latter two programs fostered the coordination of federal resources for the development of primary care systems in underserved rural areas.) A notable strategy during these early years was to increase the total physician pool in the United States, under the assumption that market forces would work to distribute physicians to underserved communities (Crandall and others 1990; Rodos and others 1990).

National Health Service Corps

In the early 1970s, it became clear that increasing the supply of physicians would not completely overcome geographic maldistributions and that additional measures were needed. As a result, the National Health Service Corps (NHSC) was established to specifically target the placement of physicians in underserved areas. In its original form, the NHSC awarded scholarships to students in exchange for service in an underserved rural or urban area upon completion of medical training. One year of service was mandated for each year of tuition support.[11]

The Corps reached its peak level of funding--$153.6 million--in 1980 (Ricketts and Guild 1983) and achieved its greatest field strength in 1986 with 3,127 physicians, 70 percent of whom were in rural areas (HHS 1990a). Despite positive evaluations and a general consensus that the program had been successful at its mission (Rosenblatt and Moscovice 1978; HHS 1984; HHS 1986a), appropriations for the Corps began to be severely cut as a result of the 1980 GMENAC report that predicted an oversupply of physicians. By 1990, the number of scholarships awarded had dropped to 41, and field strength had dropped to 1,900 (Rich 1990). Consequently, some areas that are heavily dependent on the NHSC have begun to experience shortages of physicians (HHS 1990a; GAO 1990b).

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[11] Corps physicians have the option to establish their own practice or to work as U.S. Public Health Service employees in federally supported clinics (GAO 1990b).

Faced with the negative effects cutbacks have had on these areas, the Congress passed a revitalized NHSC initiative, which was enacted in November 1990. The program received an appropriation of $92 million for fiscal year 1991, an 80 percent increase from the 1990 level. Approximately $4 million is earmarked for scholarships for nonphysician practitioners.

Some of the reduction in Corps scholarships over the past few years has been compensated for by the NHSC loan repayment program, which pays up to $35,000 per year toward a participant's medical school debt for each year of service.[12] A number of states have similar loan repayment programs, for which federal matching funds are provided. An advantage of loan repayment is that by targeting physicians who have already completed their education, the Corps can recruit physicians of the desired specialties, as well as those who are committed to service in rural areas. Recruiting such physicians may also serve to enhance long-term retention rates (Bernstein 1990).

Although it may be too early to tell, this program has not yet proven successful in placing individuals in areas of highest need. It seems that loan repayment is not a sufficient inducement to recruit physicians to the neediest communities (Rodos and others 1990; HHS 1986a; HHS 1990b). In addition, a sole reliance on loan repayment may mean a forgone opportunity to attract youth with limited resources into the medical profession with NHSC scholarships. The scholarship and state and federal loan programs can perhaps work to complement each other (U.S. Congress 1986; HHS 1986a).

Community and Migrant Health Centers

NHSC physicians frequently complete their service obligations in community and migrant health centers (C/MHCs). CHCs provide basic primary care and preventive services in designated Medically Underserved Areas (MUAs)[13]. MHCs provide similar services to migrant and seasonal agricultural workers and their families. In 1988, the federal government supported 526 CHCs[14] and 118 MHCs (U.S. Congress 1990a). Nearly half of the funding for the centers comes from direct federal grants, while the centers rely on Medicare, Medicaid, private insurance reimbursements, and patient fees for the balance.

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[12] NPs, PAs, and CNMs also qualify for the loan repayment program.

[13] MUAs are identified based on their position on the Index of Medical Underservice. This index takes into account infant mortality, age and poverty of the population, and ratio of population to primary care providers.

[14] A CHC grantee may have more than one delivery site. For example, in 1988, there were 319 rural CHCs but 793 rural service sites (U.S. Congress 1990a).

Patient fees are set on a sliding scale based on income and family size; for uninsured patients below the federal poverty line, there is no charge for services.

Many C/MHCs are on shaky financial ground due to an increase in the number of indigents they serve, rising malpractice premiums, and the failure of federal support to keep pace with inflation (NRHA 1989; U.S. Congress 1988). With the decline in the number of NHSC physicians, some centers are also facing physician shortages (Stone 1990).[15] As one form of assistance, HHS awarded $22 million in grants in 1989 to support the efforts of C/MHCs to recruit new personnel and retain NHSC physicians past their period of obligation. In addition, CHCs received an appropriation of $478 million for FY 1991, an increase of $22 million from FY 1990 to match inflation. MHCs received $52 million, an increase of $2 million.

Area Health Education Centers

In 1972, the Area Health Education Center (AHEC) program was initiated to provide federal start-up funds for states choosing to establish AHECs. State AHEC projects support the training of medical students and residents in rural areas by linking university and other medical centers with rural practice sites. As discussed previously, the setting of one's medical training is a major determinant in the selection of an eventual practice site. Thus, by coordinating and funding rural training experiences, AHECs seek to increase the number of health professionals locating outside metropolitan areas. AHECs also decrease the professional isolation of health care workers in remote areas by providing opportunities for consultations and advanced training (U.S. Congress 1988).

The AHEC program has received universal praise (U.S. Congress 1988). Further, an evaluation of the program found that the primary care physician-to-population ratio of rural counties with AHECs improved more than in counties without these centers over the period 1975-1985 (Hynes and Givner 1990).

A total of eighteen projects in 21 states are currently being funded, and 23 more have graduated from federal support to state and other sources of funding. Federal investment during the program's first five years averaged $19.4 million annually. This level of funding dropped to an average of $17.7 million per year during the period 1983-1989. Since 1989, however, funding has increased a total of 15 percent, from $16.9 million to $19.5 million in FY 1991.

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[15] C/MHCs rely heavily on NHSC personnel: In 1989, over half of the medical staff of C/MHCs was comprised of NHSC physicians.

Primary Care Education

Through the AHEC program, the federal government indirectly supports medical education. It also provides direct funds through various channels. Beginning in the early 1970s, the federal government under Title VII of the Public Health Service Act began allocating public money to support schools training primary care practitioners, such as family physicians, PAs, NPs, and CNMs. Grants were also made available to fund primary care residency programs. In 1988, federal grant money supported 79 residency programs in general internal medicine and pediatrics,[16] as well as 184 programs in family medicine[17] (Peinado and Eisenberg 1989). Originally established to increase the overall supply of health professionals, Title VII programs are still funded to redress geographic and specialty maldistributions.

The government funds other medical training projects as well. OBRA87 established the Rural Health Medical Education Demonstration Project, under which 10 rural hospitals are serving as sites for one-to-three month residency rotations. These hospitals receive enhanced Medicare reimbursement to cover the additional expenses of training residents. The demonstrations should provide insight into developing rural residency programs. In addition, HHS is awarding grants to develop interdisciplinary training programs that prepare students from various disciplines to work together and coordinate their efforts in rural settings. The program is directed at nonphysician practitioners, as no more than 10 percent of the grant money can be expended on physician training. Eleven programs were funded as of September 1990.

Under another federal program, the Health Education and Training Centers initiative, the government contracts with schools of medicine and osteopathy to create training centers focused on improving the supply and quality of health personnel along the U.S./Mexican border. The centers target other urban and rural areas with severe health care needs as well, including frontier areas, American Indian reservations, and settlements of recent refugees.

Medicare Payment Policies

The federal government attempts to enhance access to health care in rural areas through Medicare payment mechanisms. Physicians, as of January 1991, receive a Medicare bonus payment of 10 percent when they provide services in a HPSA. By partially or completely exempting several classifications of facilities from hospital prospective payment, Medicare also provides support to rural health institutions. For example, sole community hospitals, which serve as the only reasonably available source of inpatient care in an area, receive special payment allowances. Rural referral centers, which are large, nonmetropolitan hospitals that offer specialized services to patients in a wide geographic area, are paid the same rate as urban hospitals.

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[16] Funded at $17 million for FY 1991.

[17] Funded at $36 million for FY 1991.

The swing-bed program, instituted in 1980, permits small rural hospitals to use their beds interchangeably for acute care and long-term care and to receive Medicare reimbursement equivalent to that of skilled nursing facilities for the latter. Swing-bed payments can be an important source of revenue for rural hospitals that have low inpatient occupancy rates. Rural elderly also benefit from the increased access to post-acute nursing services (Silverman 1990).

The Rural Health Clinic Services Act of 1977 authorizes Medicare and Medicaid payments to clinics that utilize NPs, PAs, and CNMs to provide services, in recognition that a community cannot always support its own physician. The Act is actually a mechanism whereby freestanding clinics and provider-based clinics (for instance, hospital outpatient departments), which are staffed by nonphysician practitioners, can become eligible for Medicare and Medicaid payments. Payments are made to freestanding clinics according to an all-inclusive rate per visit, adjusted at year's end to reflect incurred costs. Payments to provider-based clinics are made according to a cost-based reimbursement formula. Requirements for licensure include location in a rural HPSA or MUA; employment of at least one NP, PA, or CNM who is available to provide services at least 50 percent of the time the clinic is open; and general physician direction, with a site visit at least once every two weeks (Commerce Clearing House 1990).

Although rural health clinics (RHCs) have proven cost effective and well qualified to deliver services to rural residents (U.S. Congress 1988), only 480 clinics are currently certified.[18] Supporters of the Act had envisioned 2,000 clinics applying for certification by 1990 (Holthaus 1989). The shortfall has been blamed on lack of publicity of the program, insufficient payment rates, state restrictions on the practices of NPs and PAs, and a cumbersome certification process (American Academy of Physician Assistants 1990). Some effort has been made to correct the problems, including legislation in 1987 to increase the maximum reimbursement rate and renewed HCFA efforts to publicize the RHC program. In addition, OBRA90 expedited the certification process by requiring HHS to approve or disapprove certification no later than 60 days after the facility has received state approval as an RHC.

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[18] It is reported that over 800 clinics have been certified since passage of the Act, but many have withdrawn from the program (U.S. Congress 1990a).

Other Federal Activities

In OBRA89, Congress authorized HHS to provide grants for up to seven states to convert selected rural hospitals to Essential Access Community Hospitals (EACHs) and Rural Primary Care Hospitals (RPCHs). This grant program is designed to promote regionalization and the efficient use of rural health resources by building linkages between limited-service primary care hospitals (RPCHs) and larger referral hospitals (EACHs). To qualify as a RPCH or EACH, hospitals must meet certain criteria. A RPCH must be staffed by a physician, PA, or NP; provide 24-hour emergency service; have no more than six inpatient beds (which may be used as swing beds); and provide inpatient care for no more than 72 hours. It must also make referral arrangements with other hospitals. The criteria for an EACH-designated facility include location in a rural area that is at least 35 miles from any other EACH or referral center and an agreement to accept referrals from RPCHs (Alpha Center 1990).

Another grant program, Rural Health Outreach, was funded in OBRA90 to establish projects to reach populations in rural areas that do not generally seek health or mental health services. At least 85 percent of each grant will be used to support outreach and health care service activities through linking rural public health programs. The grants will be used to improve cooperation between existing providers such as hospitals, health departments, C/MHCs, RHCs, and private practitioners to enhance patient access.

Coordination of Federal and Other Rural Health Resources

Most of the federal programs outlined above seek to categorically expand the health resources of rural areas; yet there is a growing recognition of the need for coordination of existing resources. Coordination involves strategies such as regionalization of hospital care and the development of linkages between urban medical centers or large group practices and rural providers. It also incorporates the optimal use of health resources, which may involve developing new models of care. For example, a community may not always be able to support a hospital and would perhaps be better served by a limited service facility. Similarly, communities that are unable to retain a physician could perhaps rely more on a PA or NP for primary care services (Ricketts 1990b). Finally, an effective emergency medical service and system of transportation are essential in the coordination of health care resources (American Academy of Physician Assistants 1990; Ricketts 1990a).

Limitation of Federal Efforts: The Importance of States

Coordination of existing resources, as well as development and implementation of new programs, is often best carried out at the state and local levels of government. It is typically at these levels where problems are most clearly recognized and solutions can be tailored to address the unique situations of individual communities. At least 24 states have established offices of rural health to better coordinate and promote rural health activities at the state level (U.S. Congress 1990a).[19]

A National Governors' Association survey of rural health experts in each state found that over 100 programs were operating in more than 30 states to address the problems of rural health systems. The programs have various objectives, including maintaining existing health care facilities, recruiting and retaining health care professionals, increasing access to obstetrical care, improving the availability of EMS, increasing services for the medically indigent, and establishing substance abuse programs (NGA 1990). To better facilitate such state activities, it is important that flexibility be built into federal regulations and programs.

COMMISSION PERSPECTIVES

The Commission recognizes the need for continued federal efforts to provide assistance to rural health systems. It supports the steps Congress has taken to revitalize the NHSC, increase financial stability of C/MHCs, and encourage RHC certification and the development of state offices of rural health. The Commission also endorses continued funding of primary care professionals' training, including AHECs. It concurs with those that recommend that higher priority be given to rural-oriented programs when Title VII grants are awarded.

The interdependence of the various federal programs and policies requires implementing them in an integrated fashion to ensure their effectiveness. In keeping with this, as the Commission carries out its mandate to consider Medicare and Medicaid payment incentives to increase access to physicians in underserved areas, it will attempt to integrate its work with existing programs. It will also look to the states for examples of successful programs that might be translated into federal policy. The Commission plans to examine options such as tax incentives for health professionals in underserved areas, payment mechanisms to attract new physicians to rural practices and to increase retention of NHSC physicians following their period of obligation, and Medicaid bonus payments for physicians in HPSAs. It will consider Medicare coverage of telecommunication consultations between rural physicians and their peers in large medical centers as well.

It has been suggested that the development of regional satellite networks by multispecialty group practices could be encouraged through Medicare and Medicaid rules of payment. The Commission plans to look into this and other models of care that can efficiently and effectively provide care to rural residents without reliance on the traditional hospital-centered system of health care delivery. Finally, the Commission will address measures to increase Rural Health Clinic certifications.

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[19] Federal matching grants are available for the establishment of such offices.

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CHAPTER 18

PROFILING OF PHYSICIANS' PRACTICE PATTERNS

The technique of profiling is becoming more widely used by Medicare and private payers to serve a variety of purposes. Profiling of physicians' practice patterns has substantial potential to improve the quality and cost-effectiveness of health care. While its use should be carefully expanded, its application will need to be monitored closely. This chapter describes the uses and potential of profiling, and outlines some of the issues that should be considered as the Medicare program's experience with it matures.

THE POTENTIAL OF PROFILING

Profiling is a computer-based management technique employed to facilitate quality assurance and monitor service use through the examination of patterns of delivery. It involves identifying one pattern of practice and comparing it with aggregations of other like patterns. Patterns of practice are comprised of a distribution of some variable of interest such as the number of specific procedures performed, or the number and types of referrals made, or the outcome of treatment as indicated by mortality rates. Profiles can be constructed based on individual practitioners or groups of practitioners defined by hospital, geographic area, specialty, type of practice, or other characteristics.

For example, the number of electrocardiograms performed per patient per year by an individual practitioner can be compared with an aggregate profile of physicians in the same specialty in the same state. The data used to make this comparison should be adjusted for the types and severity of illness of the practitioner's patients as well as other patient factors that differ among practices.

Profiling is widely applicable to utilization review, cost containment, quality assurance and improvement, and research into the effectiveness and appropriateness of treatment. Its power derives from combining information from individual events into an aggregate picture comprised of many events. Profiling thus shifts the focus for assessment of medical practice and service use from individual occurrences of care to patterns derived from services provided by many practitioners over a specific period of time. In doing so, it provides a richer context within which to assess individual and group performance or practice.

This technique has significant potential to make the process of assessing medical services less burdensome for practitioners and more efficient for the Medicare program. As the focus of practice assessment shifts from individual episodes of care to patterns of services provided, practices that should be subject to more resource-intensive review can be identified more precisely. Since profiles are generally constructed from secondary sources, such as claims data or data abstracted from medical records, screening for review can take place with less direct involvement of the practitioner, thus reducing the "hassle" of less discriminating review techniques.

At the same time, profiling can be used to monitor the use of services more broadly. In cumulating many discrete events, profiling has the potential to reveal patterns of practice behavior on many levels at once. Large databases like the Health Care Financing Administration's (HCFA) Common Working File can be used to examine service use at the various levels of aggregation including the hospital, state, specialty, practitioner, and other levels. In this way, profiling can help to selectively disaggregate large and complex patterns into their components, which would then provide a focus for further examination of what is occurring within the Medicare system. This use of profiling could, for instance, inform the implementation of Medicare Volume Performance Standards.

Although Medicare claims and medical records are rich existing sources of data from which a variety of profiles can be drawn, other information sources should be developed as supplements or adjuncts to those data. Survey data can enhance the use of profiles derived from more routine data sources. Where profiling can reveal what is occurring, survey data may help in understanding why, or in what broader context, some pattern is occurring. Practice guidelines will also be important in evaluating profiles of medical practice by providing criteria with which to assess practice patterns.

USES OF PROFILING

The uses of profiling in utilization review and quality assurance are qualitatively different. Utilization review tends to focus more narrowly on the numbers and costs of services used. Large claims databases are available to facilitate this process, and there is considerable experience with this type of profiling in the health care community. Quality assurance requires considerably more clinical expertise, since it focuses more directly on the conduct of medical practice. The questions that arise when considering the application of profiling in this area also tend to be more complex. The following is a preliminary discussion of the uses of profiling in each of these areas.

Utilization Review and Cost Containment

Many utilization review programs already take advantage of profiling. This section explains how profiling can improve utilization review, and describes its potential for Medicare.

Efficiency of Review. Profiling can greatly aid utilization review by narrowing the focus of examination more precisely than does indiscriminate case-based review. Currently, physicians are subject to a considerable amount of third-party review, at the case level, of the services they provide. Yet patterns of utilization, rather than isolated cases, could be examined to detect consistent and significant deviations from the norm before more specific case-based review is used. Profiling may even preclude more detailed review, as when all practitioners included in a profile fall within the standards used to assess their practices. Where case-based review is used, it should be focused on those whose practice patterns indicate a greater likelihood of inappropriate utilization.

In addition to the greater efficiency this implies, profiling can help improve the relationship between practitioners and reviewers in a more fundamental way. Some current case-based review may appear to be intrusive in a way that fosters an adversarial relationship between practitioners and the Medicare program. Preauthorization, for instance, can put physicians in the position of having to defend the use of a service before they provide it. While preauthorization may sometimes be necessary, it is most appropriately used when the chances are relatively high that a service will be inappropriately provided. Indiscriminately applied screens that yield few denials of services affect all practitioners who provide that service. Instead, profiling could be used to identify those practitioners who should be subject to more detailed review. This approach may help reduce the hassle many practitioners experience with the Medicare program and foster, instead, a relationship based on good faith rather than preemptive review.

Profiling is particularly useful for assessing ambulatory and outpatient utilization, given the high volume and low unit cost of these services generally. Routine in-depth review of individual services in outpatient and office settings is not usually economical; profiling can help achieve better results with fewer resources.

Examples of Profiling in Utilization Review. The physician practice profiling conducted in British Columbia is an example of how profiling can be used in utilization review and cost containment. Individual physicians' practices are compared with those of physicians with similar types of practices to identify outliers in cost and the number of services delivered per patient. Physicians whose pattern of practice deviates from the norm are reviewed. If the deviation is justifiable, they are not reviewed in the future for that deviation. Monitoring and feedback occur quarterly, and individual profiles are sent to each physician (PPRC 1990).

Pennsylvania Blue Shield has developed a similar approach to utilization review on a statewide basis. Their program provides feedback about peer group practice patterns and service costs, coupled with financial penalties for persistent overutilization (Schwartz 1989).

In Germany, physician practices are monitored and analyzed using profiles to establish payment levels. Physicians are grouped by medical specialty and case mix within types of practice (such as solo or group practice). Those with the same training, office staff, equipment, and patient mix are compared on various cost measures. Average costs are calculated for types of service and are compared with the averages for physicians in the same peer group. Physicians' reimbursements for particular categories of service are reduced automatically if they are 40 percent over the average in those categories and a satisfactory explanation is not provided (PPRC 1990).

Medicare Payment Reform. Profiling could be essential in understanding the effects of the Medicare Fee Schedule on the delivery of services. A wide variety of types of data will need to be analyzed to gain a complete picture of the practice changes that occur. Substitutions and shifts in services delivered can be detected by comparing many profiles across services aggregated at the same level, such as by specialty.

Similarly, profiling may greatly facilitate the implementation of Volume Performance Standards. It could be used to disaggregate changes in total expenditures across specific services, diagnoses, geographic regions, hospitals, specialties, and practitioners. This could, in turn, provide a focus for investigations into the reasons for disproportionate increases in expenditures as well as inappropriate failures of service provision. The Common Working File will eventually make it possible to construct population-based profiles that can help distinguish shifts in service delivery patterns from changes in overall levels of services provided.

Quality Assurance and Improvement

Profiling should be an integral part of efforts to monitor and improve the quality of care provided under Medicare. As is true of profiling generally, it can help identify areas in which the quality of care delivered should be investigated further. For example, the complication rates of an operation can be profiled for all practitioners in a given specialty. Practitioners would be informed of the findings, including the data and methods used and how the results were interpreted. Those whose profile continues to be significantly different from the norm might then be subject to more detailed review to learn why their rates are much better or worse than expected.

Profiling can also be used to help set priorities for appropriateness and effectiveness research, the development of practice guidelines, and continuing medical education. Services that exhibit the widest variation in practice may be good first targets for research in these areas. Little variation in the use of a service may suggest that acceptable interim practice guidelines based on current practice could be formulated for that service.

It is important to recognize that using profiling for quality assurance and improvement requires a significant level of clinical knowledge. The volume of data alone dictates that suitable clinical expertise be brought to the task of selecting the most appropriate data elements to be abstracted from medical records. Moreover, while utilization review focuses primarily on the quantity and cost of service use, quality assurance involves qualitative evaluation of the practitioner's art. This requires combining clinical knowledge with an equally sophisticated understanding of the use and limitations of computer-based data.

Profiling for these purposes typically demands the assimilation of information from more disparate sources than profiling for utilization review might require. Outcomes measures, patient and case-mix adjustments, practice guidelines, and detailed medical records data are all needed to fully understand the results of profiling to assess quality of care. Findings drawn from specialized surveys may also be needed in some instances. While each of these are options for use in utilization review, they are essential to quality assurance profiling.

The Maine Medical Assessment Foundation illustrates how this has been put into practice. Groups of physicians study information on regional variations in rates of procedures, using a technique called small area analysis. Considerable effort is made to determine why unusually high or low rates occur, and feedback is provided to practitioners in those areas. Utilization rates have been improved toward the norm based on that feedback. The involvement of physicians in the process is viewed as critical to its success (Keller 1990).

ISSUES AFFECTING THE IMPLEMENTATION OF PROFILING

Profiling is already widely used for utilization review, its use in quality assurance programs is growing, and it continues to be improved and adopted as a technique in these areas. The Commission anticipates that a variety of issues will arise as the use of profiling is expanded under Medicare. These should be examined in a coordinated way. This section includes a preliminary discussion of issues the Commission will analyze in more detail in the coming year. A conference is being planned to help clarify these issues and to stimulate efforts to resolve them.

Quality and Type of Data Used

The availability and quality of appropriate data are among the most critical issues affecting the development of profiling within the Medicare program. Since it involves assimilating individual data into larger aggregations, the quality of profiling results will depend greatly on the extent to which those data are uniformly collected. What sources of data, then, exist to facilitate profiling at both the regional and federal levels? To what extent are existing databases appropriate for use in profiling? How, when, and to what purpose should those data be used? To what extent will the answers to these questions differ across utilization review and quality assurance applications?

Medicare Claims. As noted above, existing Medicare claims databases provide a ready-made foundation for profiling, particularly as applied to utilization review. Yet the uniformity, and thus the quality, of those data has not been fully secured. That stems in part from the fact that carrier and intermediary claims data files were established to expedite local payment processes. This being so, the definition and collection of data items across localities is sometimes quite variable.

Medicare payment reform and heightened appreciation of the potential uses of Medicare claims data are changing that, however. The new Medicare Fee Schedule, for instance, will impose considerable standardization as it replaces usual and customary local payment formulas. The new coding system for evaluation and management services is intended to standardize the categorization and recording of physician visits throughout the Medicare system (see Chapter 8). At an administrative level, HCFA's implementation of Common Working File formats and procedures promises to greatly reduce the variation in file structure and variable definition that now exists across carriers and intermediaries.

Medical Records. It is particularly difficult to establish uniformity in data used to assess the quality of medical practice. Claims data files typically consist of a finite number of specifically defined variables that describe discrete services for payment purposes. Medical records, which describe the clinical aspects of those services, are not amenable to the same level of standardization. That is in large part due to the nature of medical decision making and the complexity of clinical information. Medical records themselves may also be incomplete or inaccurate.

To assess the quality of care under the Medicare program, Peer Review Organizations (PROs) are required to develop medical records databases and to engage in profiling activity to monitor local practice. Aside from their clinical integrity and complexity, the volume of such data is more than can reasonably be accommodated in the Medicare data systems. Consequently, medical records are commonly abstracted with specific medical assessment purposes in mind. While as much as 25 percent of all hospital claims are included in PRO databases, the content and definition of PRO files vary considerably according to local specifications (GAO 1988, 1989).

Efforts are being made to codify medical records data abstraction in order to standardize some aspects of quality review under Medicare. The Uniform Clinical Dataset (UCDS) is a prominent example. UCDS software guides which clinical data are abstracted for case review. Medical records abstractors key those data directly into computer files based on interactive prompts from the software. When the software is properly written and the data are accurately abstracted, the UCDS can provide relevant, standardized clinical data that can be linked to other files, including claims databases. Medical records also need to be accurate and complete.

The UCDS is more than a data collection device, however. HCFA intends that it become a powerful tool for medical assessment and effectiveness research, although its application in these areas is less clearly defined (Roper 1988). The success of the UCDS will depend on the extent to which a wide variety of physician representatives, health researchers, and health care managers are involved in its design and implementation.

Facilitating Profiling. As Medicare program databases continue to evolve, explicit consideration should be given to ways in which they could be improved and used to facilitate profiling for various purposes. For example, the reliability of the physician specialty indicator should be examined, since it may provide the basis for specialty-related comparisons and feedback. Physician specialty is now self-reported, and its definition is not uniformly applied. A more rigorous specialty designation may be needed if specialty societies are to be the focus of information feedback concerning their members' services. If that is the case, the specialty indicator may need to incorporate, or be used in combination with, information concerning board certification.

At the same time, practice patterns are important in themselves regardless of what formal qualifications a practitioner may possess. Profiling may offer a way to derive functional specialty classifications by grouping physicians whose practices are alike on relevant dimensions (such as case mix and patterns of procedures they provide), regardless of self-identified or certified specialty or other structural characteristics.

More broadly, the routine availability of good physician-specific indicators such as functional specialty, board certification, and even case mix, will greatly facilitate profiling throughout the Medicare program. Carriers and PROs will require the same types of identifying information to conduct profiling despite their respective orientations of utilization and quality assurance review. It may be useful for HCFA to include such indicators in its Unique Physician Identification Number (UPIN) system. UPIN files could then provide a Medicare systemwide core set of personal and professional practice characteristics needed to conduct profiling.

Patient characteristics that go beyond basic demographic and visit-specific information will also need to be assimilated into the Medicare data system as profiling for quality assurance matures. How can functional status and other patient-level information be integrated into

Medicare data collection efforts? Which indicators are most appropriate for which uses of profiling? What part might consumer satisfaction indicators play in quality assurance?

Interpretation of Results in Profiling

To assess physicians' practices, patient characteristics and preferences must be taken into account, and it must be decided what is a significant difference from the norm.

Adjustments to Raw Data. Routine claims files and the trend toward more standardized medical records abstraction provide a solid basis for profiling used to monitor, assess, and inform the operation of the Medicare program. Yet unadjusted claims or clinical data may not provide enough information from which to draw conclusions. Patterns of practice based on raw data alone need to be adjusted for patient- or practice-related characteristics, such as the case mix of the practice and the severity of illness of patients. How well can such adjustments be accomplished? How can patient preferences be taken into account? What standards, if any, need to be set to ensure that adjustments are properly applied at the local level? Should the relative weight such adjustments receive differ across utilization review and quality assurance applications of profiling?

In assessing the effectiveness or quality of treatment, measures of outcomes are necessarily a function of patient factors as well as the specific care delivered. However, better methods for making these adjustments need to be developed and tested. For example, there is some controversy concerning whether HCFA's adjustment of the hospital mortality data it publishes is sufficient to draw clear conclusions about the quality of a given hospital's care (Park 1990). Such adjustments may produce results that are difficult to interpret. One study found that hospitals with higher-than-expected death rates from two common conditions did not deliver poorer quality care when assessed with detailed process measures (Park 1990).

This kind of example suggests the importance of achieving broad agreement concerning the adjustments required to implement more advanced profiling techniques. That agreement should encompass all sectors of the health services community, from physicians to insurers to program administrators. Without such agreement, insufficient or incorrect adjustment of outcomes poses the threat that practitioners, hospitals, and payers may try to avoid patients who are more likely to have poor outcomes. This may hinder access to care for those who are in most need of it. Practitioners and hospitals may also be unfairly labeled as poor providers as the result of improperly made adjustments.

Assessing Results. The interpretation of profiling results will also benefit from agreement about what constitutes significant difference. When is a profile significantly different from its comparison profile? This depends largely on the use to which the profile will be put. A more significant difference is likely to be required before punitive actions, as opposed to corrective warnings, are used. Rigorous methods for comparing profiles should be developed and tested.

Practice guidelines and supplemental survey data are also likely to inform the assessment of profiling results. Each can be used to set appropriate standards. However, the process of translating practice guidelines into assessment criteria needs to be more thoroughly examined. Consideration might be given to ways in which criteria used for profiling could be explicitly included in guidelines.

The Feedback Process

Profiling makes it possible to assess physician practice within the context of related practice. But the next step, the distribution of profiling results, or feedback, is crucial for change to occur. It is through the feedback process that profiling can serve to improve the practice of medicine most directly. Although some of the requirements of this process are reasonably clear, continuing efforts should be made to identify how the process can be improved.

Timeliness. The availability of appropriate data and resources, and the complexity of the measures used to build the profile, will affect the timeliness of profiling. Nevertheless, profiling results are more likely to affect practice if they are presented in the context of current rather than previous activity. As Medicare data systems and the implementation of utilization review and quality assurance continue to evolve, particular attention should be paid to ways in which those systems and programs can be coordinated to achieve timely production and dissemination of profiling results.

Knowledge Base. Generally, a good understanding of profiling results requires some degree of literacy in epidemiologic concepts and language. Currently, however, fewer researchers, administrators, and even physicians are facile enough with this way of thinking than will be necessary as profiling is used more broadly within the Medicare program.

It is also clear that the level of sophistication required to interpret profiling results varies considerably. Utilization review profiling results commonly require some, although not necessarily great, interpretive ability. By contrast, profiling for quality assurance can be much more difficult to understand.

Ongoing educative efforts should be made to ensure that the health services community has the knowledge base needed to produce, understand, and respond to feedback from profiling. Medical schools and residencies should help prepare physicians to assimilate epidemiologic concepts into their practice of medicine. Health research and administration curricula should emphasize such study if they do not already do so. Consumers should also learn to understand the role of profiling.

The Medicare program's profiling and feedback process itself should be educational in this regard. When the results of profiles are presented, explanatory materials should describe how the profiling was conducted and how it was interpreted. That would include discussion of any adjustments made to the basic data. Over time, this should help improve the overall level of literacy concerning profiling.

Educational efforts may also affect change in the practice of medicine more directly. Practitioners need to know more than that their practice of medicine differs from that of their peers in some regard. They also need to know what change in behavior to make. Effective feedback of profiling results is very closely related to the identification of appropriate practice. Development of practice guidelines will thus be critical to the maturation of profiling under Medicare.

Physician Participation. The timeliness of results and a strong knowledge base are important structural components that will help to make the feedback process effective in improving the practice of medicine. But the willingness of practitioners to participate in this process is the motivating force that is needed to make it happen. It is critical that the physician community be intimately involved in the development and implementation of profiling so that the data, analysis, and results are credible to practitioners. Professional societies, hospital departments, and other local groups of practitioners should be deeply involved in assessing profiles and determining how they are used to improve practice. Since most physicians will not be personally involved in the profiling process, they are more likely to be receptive to the results if broad involvement of physicians is ensured.

At an individual level, the methods used in the feedback process can affect practitioners' willingness to change practices. Simply communicating the detail of the information may be enough if the practitioner accepts it, and it is clear what change needs to be made. Informal peer pressure, such as posting the results of profiles in the physicians' lounge, may also change practice patterns (Keller 1990). Some practitioners may require individual case review if less direct methods of changing their pattern of practice fail to work. More coercive methods of affecting behavior may sometimes be required, including denial of payment, restriction of privileges, or other formal discipline. Such severe sanctions should be predicated only on in-depth review.

Each of these methods may also be affected by countervailing financial incentives, resource limitations, patient demands, and other factors. The best approach in any given instance will depend on the nature and context of the practice that is being reviewed, and the resources available to conduct that assessment.

Access to Information. Finally, there are broader issues of access to information about the methods and results of profiling. Practitioners will want open access to the operation of profiling generally, from the criteria used to assess their practice to the formal profiling results themselves. Practitioners and hospitals are concerned about the accuracy of data on quality of care and the ability of consumers and others to interpret those data properly. Consumers may want hospital and practitioner-specific data on quality of care to help them choose their caregivers. Payers may seek information about patients and practitioners that neither wants to reveal, such as health status and outcomes of care.

While profiling is inherently a centralizing process in both the collection of data and the implementation of the technique, it should be open to the extent possible. The most effective way to ensure the appropriate interpretation of profiling results in the future is to encourage all those affected, from consumers to practitioners, to become more sophisticated in understanding their uses and limitations.

Coordinating Profiling

Profiling involves the coordination of substantial technical, administrative, and professional resources. Therefore, it is important to ask who should be responsible for monitoring and coordinating profiling efforts at both the federal and local levels. The organizational structures and the distribution of responsibilities now in place to implement profiling should be examined in light of its expanding use.

Currently, Medicare carriers and PROs collect claims and medical records data, maintain databases, conduct profiling and analysis, and provide feedback for the purposes of utilization review and quality assurance. They are an important source of expertise concerning profiling in their respective areas. However, the application of profiling by carriers and PROs is quite variable from one organization to another (GAO 1989). Much more work is needed to standardize profiling within and across these entities.

In the longer run, an alternative organization of profiling responsibilities may be needed. The conduct of profiling will involve coordinating substantial data collection, adjustments to those data, the development and use of appropriate review criteria, the education of practitioners and consumers, and much more. Profiling should be centered in an entity (or entities), either within HCFA or under contract to it, that is organized to perform these activities in a coordinated manner. Such an entity (or entities) would also provide a focus for much-needed institutional memory in this area.

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CHAPTER 19

MALPRACTICE

The medical malpractice system is chronically ill: its symptoms include rising costs of insurance and health care, professional disaffection, reduced access to services, allegations of widespread defensive medicine and impaired doctor-patient relationships, and loss of confidence in the system. These problems occur against a backdrop of significant numbers of injuries due to negligent medical care, most of which are not dealt with by the malpractice system. State legislatures have been unable thus far to remedy these problems or prevent episodic insurance crises.

The malpractice system was not legislatively created and designed to achieve clearly defined social goals. It originated in the common law and, responding to a variety of pressures and interests, evolved into the complex enterprise it is today. The Commission believes that for reform to succeed, a fundamental reexamination of the malpractice problem is needed. Presented here is a definition of the malpractice problem, a set of possible goals a malpractice system may try to achieve,[1] and an evaluation of the present malpractice system in light of these goals. In the coming year, the Commission will evaluate proposed reforms of the malpractice system, explore the federal government's role in malpractice reform, and make recommendations.

WHAT IS THE MALPRACTICE PROBLEM?

The malpractice problem has many aspects. This section develops the Commission's approach to malpractice reform.

History of Malpractice

Malpractice claims were rare until the first half of this century. The frequency of claims accelerated from the late 1950s through the 1960s, then jumped 19 percent annually from 1971 to 1973 (Sloan 1989b). This presaged a crisis in the mid-1970s of sharp premium increases and decreased availability of insurance, especially for high-risk specialties. The problem in availability was met by physician-run insurers, joint underwriting associations, and state-mandated patient compensation funds. Insurers improved the predictability of losses by switching from occurrence to claims-made policies.[2] Claims frequency inexplicably stabilized in the late 1970s, although the cost per claim continued to increase (Sloan 1989b). States enacted tort reforms, but because of legal challenges the reforms often did not take effect for years.

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[1] The term "a malpractice system" is used here to refer to any system of identifying and compensating medical injury, including systems that are not based on negligence.

Premium increases moderated until the early 1980s, when the frequency and cost of claims again grew rapidly. The number of claims per physician increased more than 50 percent from 1980 to 1986, and the average amount paid per claim more than doubled in real dollars (Sloan 1989b). Insurance premiums climbed 81 percent between 1982 and 1985, with wide differences among specialties (Task Force on Medical Liability and Malpractice 1987). Insurance availability decreased but not as much as in the earlier crisis, perhaps because of the physician insurers. The crisis of the mid-1980s has now abated: malpractice claims frequency has again mysteriously declined, and premiums have stabilized.

The history of malpractice is one of a long-term underlying rise in the frequency and cost of claims, punctuated by episodic crises in insurance cost and availability. Insurance and financial considerations have dominated the stage and been the focus of reform. However, the ultimate purpose of a malpractice system must be to benefit patients. Therefore, it is essential to base an analysis of the malpractice problem on the interests of patients.

Patients' Interests in a Malpractice System

When people are ill, their first concern is that they have access to medical care. Access can be compromised by high cost or unavailability of services, both of which can be affected by a malpractice system. Once they gain access to care, patients want good-quality, affordable care by competent medical professionals practicing in well-run settings. Patients would prefer most of all to avoid medical injury (injury due to medical care or its omission). Quality of care also means avoiding the distorted decisionmaking and financial costs induced by defensive medicine. Another element of quality medical care desired by many patients is information and shared decisionmaking that will give them a measure of control over their own medical care.

If a medical injury occurs, many patients desire fair and speedy compensation for their losses. They prefer that the process of gaining compensation be humane. Some wish to see their medical caregivers held accountable in some fashion for causing the injury. To feel confident that their interests will be respected, they desire that the system be publicly accountable.

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[2] Occurrence policies cover claims arising from incidents within the policy period, even if the claim is filed later; claims-made policies cover only claims filed during the policy period, even if the incident occurred earlier. Payments under claims-made policies are easier for insurers to predict because projections do not need to be made as far into the future.

The salient feature of the patient's perspective is that he or she is the one who will suffer medical injury if it occurs. It follows that avoidance of medical injury is patients' paramount interest with respect to a malpractice system. The malpractice problem should be regarded first as a problem of medical injury and its avoidance.

The Nature and Extent of Medical Injury

Despite the Hippocratic injunction to "do no harm," medical injury is inherent in medical care. The problem of medical injury is of alarming dimensions. Studies have documented that as many as one-third of patients admitted to university hospitals suffer an illness, complication, or injury due to medical treatment. Although these studies included all adverse reactions to treatment even if they did not prolong the hospitalization or result in disability, as many as one-fourth of the reactions were considered major (Schimmel 1964; Steel 1981). These high rates were documented prospectively, using information from the medical record and from caregivers and hospital reviewers. In addition, these studies were performed in university hospitals, in which more medical injuries would be expected than in community hospitals (Harvard Medical Practice Study Group 1990). One study of community hospitals, however, concluded that up to one-fourth of deaths from three common illnesses were probably preventable with appropriate medical care (Dubois 1988).

There have been two large retrospective studies of the incidence of medical injury. The first examined records of 20,864 admissions to 23 California hospitals (Mills 1977). A medical injury was found to have occurred in 4.65 percent of admissions; 17 percent of the injuries were considered negligent (occurring in 0.8 percent of admissions).

The Harvard Medical Practice Study in New York reviewed 30,121 inpatient records and found 1,278 medical injuries, of which 306 were deemed negligent (Brennan 1991). Extrapolating to all admissions in New York State in 1984, 3.7 percent were projected to have resulted in a medical injury that prolonged the hospitalization or caused disability. More than half of injured patients suffered only minimal impairment lasting less than one month. One-sixth of the injuries resulted in temporary disability, 6.5 percent in partial or total permanent disability, and 13.6 percent in death.[3] Negligent medical care caused 27.6 percent of the injuries (occurring in 1.0 percent of all admissions); these injuries were more likely to be severe than nonnegligent injuries. The findings were similar to the earlier California study. The methodology of these studies was liable to underestimate the overall rate of medical injuries and probably the rate of negligent medical injuries as well.

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[3] Some of those who died from their medical injury would have died from their underlying illness even if the medical injury had not occurred (Harvard Medical Practice Study Group 1990).

The Medicare population is at higher risk for medical injury than younger patients (Mills 1977). The Harvard Medical Practice Study found that patients over 65 years of age were twice as likely to suffer medical injuries as those under 65. The proportion of medical injuries due to negligence also was significantly increased in patients over 65 (Harvard Medical Practice Study Group 1990).

The increased rate of negligent and nonnegligent medical injury in Medicare patients is undoubtedly due to their diminished physiologic reserve coupled with greater severity of illness and comorbidities (Steel 1981). However, it is puzzling why the proportion of medical injuries that were negligent was greater in older compared with younger patients. This could mean that Medicare patients receive poorer quality of care, but there is no direct evidence to support this. In fact, in one study, preventable deaths occurred more often in younger patients (Dubois 1988). A possible explanation for the increased rate of negligent injuries in the elderly is based on the premise that negligent care produces more injuries in the elderly because of their diminished physiologic reserve. Nonnegligent care would ordinarily be expected to produce more injuries in the elderly as well, but physicians are able to prevent some of these injuries by making adjustments for the elderly's diminished physiologic reserve. Therefore, the ratio of negligent to nonnegligent injuries is greater in the elderly. In addition, the need to take additional measures to prevent injury in the elderly offers opportunities for those measures to be neglected.

The evidence is compelling that the rates of inpatient medical injury and negligent medical injury are substantial. Whether these rates have changed over time is not known, but some speculate that as medical treatments become increasingly powerful and risky, the rate of medical injuries increases. The increase in intensity of treatment (number and complexity of services delivered per patient) produces more opportunities for injury. There is little evidence concerning outpatient medical injury, although approximately 20 percent of malpractice claims originate from outpatient care (Zuckerman 1986). Trends in the rate of negligent medical injury are completely unknown. Although the rate of claims filed per physician has risen, this may reflect a greater propensity for injured patients to file claims more than an underlying increase in the rate of negligence. It is plausible that as medical diagnosis and treatment become increasingly effective, there may be more instances of negligent failure to provide effective services. Furthermore, as procedures become more risky, there may be more opportunity for negligence to produce injury.

Medical injuries represent the tip of the iceberg of poor-quality care that can potentially produce injury, since substandard care does not inevitably result in injury. It is poor-quality care itself that must be addressed in order to reduce medical injury. A wide body of research suggests that, although U.S. medical care overall may be of good quality, there is much room for improvement. A study commissioned by the Office of the Inspector General (OIG) concluded that 6.6 percent of hospital inpatients received poor quality of care bordering on malpractice (OIG 1989). Procedures and other therapies are sometimes performed for unproven or inappropriate indications. Preventive services are underutilized. Prospective observational studies are needed to determine how often and why care is given (or omitted) that could potentially result in medical injury.

POSSIBLE OBJECTIVES OF A MALPRACTICE SYSTEM

Numerous goals have been posited for a malpractice system. They can be grouped into four areas: quality of care, compensation, cost, and accountability.

Quality of Care

The malpractice system should improve the quality of care delivered. This goal is often referred to as "deterrence" because poor quality of care should be deterred. Improving the quality of care is commonly believed to be the most important goal of the malpractice system. Quality of care has many aspects. Its technical dimension includes more than just the avoidance of negligent medical injury: it includes the quality of medical decisionmaking in general. The human dimension of quality of care reflects the many considerations that devolve from the fact that the health care system treats persons, not diseases in isolation. Good quality of care necessarily involves dealing well with these human aspects of care, as well as with the biological aspects of the disease. Good medical care presupposes access to care. Finally, the malpractice system should be integrated with other systems that ensure and improve quality of care. Each of these aspects is discussed separately below.

Minimizing Medical Injury. The most important way for a malpractice system to promote good quality of care is to minimize medical injury. It can accomplish this by giving physicians and institutions incentives to act carefully so as to minimize injury, within the bounds of current knowledge. But a good malpractice system should do more than this: it should encourage data collection and research to help expand the boundaries of what injuries are preventable. Ideally, one would like to minimize both preventable and currently unpreventable medical injuries.

Promoting Good Medical Decisionmaking. Another way a malpractice system can affect quality of care is by promoting, or at least not hurting, good medical decisionmaking. Medical decisions should be predicated on medical benefit to the patient. "Defensive medicine" is often used to refer to inappropriate decisions that are prompted by the malpractice system rather than medical considerations. An ideal malpractice system would minimize the occurrence of defensive medicine. Good medical decisionmaking ordinarily requires the participation of patients. The present system tries to encourage this with the law of informed consent.

Fostering the Human Dimension of Quality of Care. A malpractice system can enhance, or at least not detract from, the human dimension of medical care. A malpractice system can alter the environment in which medicine is practiced, detracting from physicians' job satisfaction and the manner in which medicine is practiced. The doctor-patient relationship that is so central to medicine can be affected favorably or adversely by a malpractice system.

Preserving Access to Care. Even if a malpractice system does not enhance access to care, at the least it should not create or exacerbate barriers to access.

Integrating Malpractice with Other Quality Improvement Mechanisms. An important underlying issue is what aspects of the spectrum of quality of care should be addressed directly by a malpractice system, and what aspects are better targeted by other mechanisms to ensure or improve quality. Whatever the answer, a malpractice system should be integrated with other mechanisms of quality assurance and improvement, such as licensure and certification, continuing medical education, Medicare and hospital quality assurance programs, and practice guidelines.

Compensation

Compensation for medical injuries is often hailed as a major goal of a malpractice system. One of the most important issues for a malpractice system is determining which injuries it should compensate. For example, should the system compensate all illness and injury regardless of cause, only medically caused injury, or only negligent medical injury? Similarly, it must be decided what kinds of losses to compensate and at what level to compensate them. There is controversy over which types of injuries and losses should be compensated. But compensation should be at least fair, timely, and available to all whose injuries meet the requirements. To be fair, compensation should be proportionate to the amount of loss, consistent (and thus predictable) across similar losses, and provided to all those eligible for compensation who would desire it. There may be some trade-off between individualization of compensation and consistency or predictability of awards, but such trade-offs should be minor. Compensation must be expeditious to be most useful; this is especially true for Medicare patients.

Cost

In achieving its goals, a malpractice system should be efficient. It should minimize the social costs it consumes compared with those it saves. These costs include administrative costs involved in operating insurance companies, risk management systems, law offices, and courts. Most of the expense is incurred by investigating and litigating claims. Payments for nonmeritorious claims raise the visible costs of the system, but they are transfer payments that reduce social welfare rather than true social costs.

By attempting to decrease the occurrence of medical injury, the malpractice system strives to lower the social cost of those injuries. The net cost (or savings) from these efforts must be included as well. Attempts to minimize injury or claims are commonly called defensive medicine. Some of these efforts may efficiently reduce medical injury, while others may be wasteful. A malpractice system should induce an efficient amount of expenditures to prevent injury. An administratively expensive malpractice system could be cheap, on balance, if it substantially lowers the number of injuries. The cost of these injuries is not measured solely by the damages paid; it must include the cost of uncompensated injuries as well.

Accountability

Deterrence is accomplished by holding medical professionals responsible for causing negligent injury, but accountability is also sometimes considered a goal in itself. Some believe that an important function of the malpractice system is to punish wrongdoers. However, to the extent that punitive sanctions are unnecessary, they should be avoided.

A desirable characteristic of a malpractice system is that it be accountable for how it works. There should be some means of monitoring and assessing the performance of the system as a whole. This is needed to support public and professional confidence in the system. Public accountability may sometimes be at odds with other goals: for example, for voluntary reporting of medical injury to occur, the information may need to be kept confidential.

Participants in the system should be accountable for improper actions they take in executing the system. Lawyers, for example, should be accountable for bringing clearly baseless lawsuits, and expert witnesses should be made responsible for their testimony.

EVALUATION OF THE PRESENT MALPRACTICE SYSTEM

This section assesses the performance of the present malpractice system in achieving each of the goals that have been ascribed to it. Although the malpractice system was not necessarily designed to achieve all of these goals, this evaluation is useful for deciding which goals the malpractice system can best address and which are better achieved by other systems. For any goal it does not achieve well, the question for reform is whether the present system can be improved or whether another system should be made responsible for achieving that goal. It is most convenient to discuss the goals in the order of compensation, cost, quality of care, and accountability.

Compensation

The available evidence indicates that the malpractice system does not in general provide compensation that is fair, predictable, timely, and available to all whose injuries meet the conditions for compensation.

Types of Injuries Compensated. The present malpractice system is intended to compensate only limited types of injuries. Only injuries that meet two tests qualify for compensation: the injury must have been caused by medical care (rather than by a naturally occurring disease process), and the medical care that caused the injury must have been negligent. This system is fault-based, since medical illness per se and nonnegligent medical injuries are excluded.

These restrictions are difficult to justify from the perspective of compensation alone. An injury and its consequences are the same regardless of the cause. The reasons for compensating the same loss in one circumstance but not another must come from considerations other than pure compensation.

The present system is one resolution of the trade-offs between compensation and other goals such as deterrence and cost. Because it relies on sanctions for negligent injuries to achieve deterrence, for example, it does not compensate nonnegligent injuries. Relaxing the requirements of fault or medical causation would open up the system to vastly larger numbers of injuries, the burdens of which now fall on the ill or injured patient and private and public insurance and welfare systems as well as those who pay for them. Although the social costs of injury would not change, the internal costs of the malpractice system would increase enormously.

Accuracy of Determining Who Should Be Compensated. The present system largely fails to compensate those who warrant it, while compensating some who do not. Two factors determine the accuracy of who is compensated: whether those who suffer negligent medical injury make a claim for compensation, and whether the malpractice system correctly distinguishes claims that merit compensation from those that do not. The available evidence indicates that neither is accomplished well in the present system.

Data from the Harvard Medical Practice Study supported an estimate that, in New York State in 1984, 16 times as many patients suffered an injury from medical negligence as there were patients who received any compensation from the medical malpractice system. Since not all who were compensated had in fact suffered a negligent injury, the true ratio of negligently injured patients to negligently injured patients who receive compensation was greater than 16 to one. An analysis of the claims actually filed by patients whose hospitalizations were among the 30,121 reviewed in the study, although subject to error because of the small numbers of claims made, revealed that less than 2 percent of negligently injured patients identified by the study had filed a claim (Harvard Medical

Practice Study Group 1990). In an earlier analysis of the large California study of medical injury, it was estimated that only about 4 percent of negligently injured patients were compensated (Danzon 1985).

Why do so few negligently injured patients file claims? Research is in progress to answer this question, but several reasons can be adduced. Patients may attribute medical injuries to their underlying illness, or they may not be aware that the medical injury they experienced was due to negligence. The present system provides no incentive for medical caregivers or institutions to inform patients they have suffered a negligent medical injury. Those who know they experienced a negligent medical injury may choose for reasons of their own not to file a claim, or they may be stopped by external barriers to filing a lawsuit. For example, the high cost of bringing a claim through the legal system is a barrier to making claims that have low expected payments. The Harvard Medical Practice Study Group (1990) concluded that "injuries caused by medical negligence and not resulting in litigation are predominantly minor or occur to persons with limited life expectancies." However, this cannot be the sole explanation, since one study concluded that at most only one in seven patients incurring major permanent disability filed a claim (Danzon 1985).

The phenomenon of not filing claims is particularly true of Medicare beneficiaries, who bring suit far less often than do patients under 65. In a study of 756 medical malpractice claims in Wisconsin in 1983 and 1984, patients 65 or older filed 9.1 claims per 100,000 hospitalizations, compared with 40.1 claims per 100,000 hospitalizations made by patients under 65 (Sager 1990). Similarly, Medicare-age patients filed 1.0 claims per 100,000 inpatient days, compared with 5.3 claims by younger patients. Since the rate of negligent injuries is higher in patients 65 or older, their rate of claims per negligent injury is even lower than these figures suggest.[4] Only about 10 percent of all malpractice claims are filed by Medicare beneficiaries (OIG 1989). On the basis of data from the California study, Danzon estimated that only one in 55 persons over 65 who suffer a negligent medical injury receives any compensation (Danzon 1985).

Medicare patients' lower rate of filing claims may be due in part to their lower expected awards. A General Accounting Office (GAO) study of 73,500 medical malpractice claims found that the average indemnity payment in 1984 for Medicare beneficiaries was $28,352, far less than the average of $105,250 paid to patients with private or commercial insurance (GAO 1987a).

The second factor contributing to the inaccuracy of the system (in addition to the low rate of filing claims) is that for claims that are filed, there is some evidence that the malpractice system has difficulty distinguishing nonnegligent or nonmedical injuries from negligent medical injuries. One reason for this is that it can be difficult to judge causation (whether an injury was due to medical care or to the underlying illness). The reliability of physician reviewers' judgments of causation was termed "good" by the Harvard Medical Practice Study Group (1990), but there still was substantial disagreement. One-third of medical injuries identified in the Harvard Medical Practice Study were "close calls" on the issue of causation. The difficulty of proving causation in elderly patients, who have more severe and often multiple illnesses, may be another factor contributing to the elderly's lower rates of filing claims.

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[4] In the Wisconsin study, once a case was filed, patients 65 or older did not differ from younger claimants in the percentage of cases dismissed, settled, or resolved in their favor (Sager 1990).

In a study of closed malpractice claims files for anesthesia-related patient injuries, expert reviewers judged that there had been no negligent care delivered in 42 percent of 620 cases in which payment was made. Besides raising the internal costs of the system, it violates fairness to compensate some nonnegligent medical injuries, particularly when few negligent injuries are compensated. The number of wrongly compensated claims, though troubling, is far less than the total number of negligent injuries; nonetheless, it may be an appreciable fraction of the negligent injuries compensated.

Conversely, some negligently injured patients who file a claim are not awarded compensation. In a study of closed anesthesia claims, 10 percent of 469 cases involving negligent care did not result in any payment to the claimant (Cheney 1989).

Level of Compensation. Does the malpractice system compensate patients the right amount? The first issue is, what is the right amount. The current system measures damages by what it would take to return negligently injured patients to their status before injury. This is termed full compensation, which includes both economic and noneconomic damages. Economic damages compensate the patient for monetary losses such as past and future medical expenses, past and future lost wages and pension benefits, child care expenses, and travel expenses incurred to obtain medical care. Noneconomic damages are monetary payments for pain and suffering, loss of consortium,[5] or lost enjoyment of life. Noneconomic damages are by their nature subjective; they vary widely from case to case and can comprise the bulk of extremely large awards from juries.

Full compensation is more generous than that provided by other compensation systems, such as worker's compensation and government disability programs. Tort payments for lost income are not taxable, while the forgone income would have been (Danzon 1984). In theory, approximately one-third of the actual damages is used to pay for legal representation; if juries do not inflate awards to account for this, it would cause systematic undercompensation.

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[5] Loss of companionship and support from a spouse.

Awards increase with greater severity of injury, but a GAO study showed that payments for less than $50,000 significantly overcompensated true economic losses and payments of $100,000 or more were less than patients' actual economic losses (GAO 1987a). There is conflicting evidence on whether awards overall are greater or less than losses (Zuckerman 1986); one estimate was that the total of awards in 1974 was slightly below actual economic losses.

Malpractice injuries seem to be compensated more than are comparable injuries arising from nonmedical settings. For example, researchers estimated that median awards for a leg amputation were $199,000 in an automobile accident case, $330,000 in a private-property owner case, $678,000 in a product liability case, $754,000 in a medical malpractice case against a physician, and $761,000 in a workmen's compensation case (Danzon 1985). The disparities may be due to jurors' knowledge that physicians are heavily insured or that the claimant's legal fees must be taken out of the judgment. This does not indicate which is the appropriate level of compensation, only that payments are inconsistent across contexts.

Unless collateral sources are subtracted from judgments, compensation from collateral sources results in the malpractice system overcompensating net losses. The Harvard Medical Practice Study Group (1990) quantified the economic losses from medical injury beginning six months after the medical injury (excluding losses from the first six months). It found that 86 percent of the medical expenses were covered by health insurance, but only 19 percent of lost earnings were reimbursed by disability insurance and sick leave. A Medicare population would have fewer lost earnings than those in the Harvard Medical Practice Study.

Malpractice cases usually settle for less than the expected award at trial due to uncertainty about whether a verdict will be won. Since 90 percent of claims are settled before trial (Congressional Research Service 1990), this is potentially an important effect, depending on what proportion of cases involve clear liability.

Timeliness. In 1975, paid claims took an average of 41 months from injury to payment; claims resulting in no payment took an average of 32 months after the injury before they were dropped (Danzon 1985). From 1975 to 1978, the average length of time between injury and resolution rose from 37 to 46 months (Zuckerman 1986). Claims involving higher awards take longer to be resolved; the delay is longest for cases involving permanent total disability (Danzon 1985). Obstetricians and gynecologists (whose claims may not be typical of other specialties) recently reported that their average length of time from occurrence of injury to filing of a claim was 29 months, and an average of another 31 months was spent until a claim was resolved. These time intervals, reported in a 1990 survey, were significantly longer than those found in the same survey done three years previously (Opinion Research Corporation 1990).

Claims involving the elderly do not appear to take longer to resolve than claims of younger patients; however, delay in receiving compensation may be more burdensome to elderly patients because of their lower life expectancy and resources.

Cost

Administrative costs include the cost of pursuing or defending claims and the cost of defensive medicine. The total cost of medical injury is not known; payments to malpractice claimants represent only a tiny fraction of it. It is not known how much the malpractice system reduces the total cost of medical injury, or how efficiently it accomplishes whatever injury reduction is attributable to it.

The internal cost of the present malpractice system, as approximated by insurance premiums collected, was about $2.5 billion in 1983 but almost doubled to $4.7 billion by 1985 (OIG 1989). Premiums represent about 5 percent of physician gross revenue, 1 percent of hospital gross revenue, and 1.5 percent of overall personal health care spending (Bovbjerg 1986). In itself, this is probably not excessive, but it represents only a fraction of the costs of negligent medical injury or medical injury itself.

The present system is administratively inefficient. Claimants receive only about 40 percent of each dollar paid in insurance premiums, with the remainder being spent on litigation costs and insurance company overhead. Other estimates range from 18 percent to 54 percent (Zuckerman 1986). Excessive profits of insurance companies do not seem to be a cause of the low proportion of premiums paid to claimants. Insurance company profits are difficult to estimate,[6] but they seem to depend more on the return on their investments than on profits from underwriting. One factor raising administrative costs is that less than half of all malpractice claims result in any payment, and distinguishing nonmeritorious claims consumes much of the administrative expense. Although these expenditures may be efficient from the insurer's viewpoint, it is undesirable that they are so high.

Patients and physicians lose their own time and money in litigating claims. One estimate for nonautomobile tort claims is that 4 percent of the award goes toward recompensing the claimant's time (Kokalik 1986). In a 1983 survey, physicians reported that each claim caused them a mean loss of 2.7 work days (Zuckerman 1984). The Harvard Medical Practice Study Group (1990) surveyed 739 New York State physicians about their own time and money spent in defending malpractice claims. Of those who had been sued, about one-fourth lost one or two days of work, one-third lost three to five days, and one-third lost more than five days. Only 6 percent of all those sued had out-of-pocket expenses not covered by insurance, usually less than $5,000. These time and monetary losses do not themselves contribute significantly to the cost of medical care. But they may be burdensome to individual physicians, particularly those in frequently sued specialties.

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[6] The medical malpractice line from 1975 through 1985 either suffered a loss of $653 million when insurance company accounting methods are used or yielded a profit of $2.0 billion when federal tax code accounting methods are used (GAO 1987b).

Cost of Defensive Medicine. Defensive medicine is difficult to define precisely. It usually carries a negative connotation of bad or wasteful medicine. However, defensive medicine can be beneficial. For example, one of the responses physicians have made to the current liability climate is taking more time to explain choices to patients. This may reduce the risk of a subsequent lawsuit if complications occur, but it also probably benefits patients and results in better medical decisionmaking. Even ordering "unnecessary" diagnostic tests may confer a net benefit to the patient, although the tests may not be cost-effective for the health care system as a whole.

Defensive medicine should be defined as an action that would not have been performed (or omitted) without the motivation to reduce the chance of a claim being filed or won. This definition hinges on the subjective decisionmaking of the physician, so it would be worthwhile for a more operational definition to be developed. Defensive medicine is not restricted to positive actions such as ordering diagnostic tests or spending more time with patients. It also denotes avoidance of risks by not treating high-risk patients or performing high-risk services.

Defensive medicine can be categorized as appropriate, inefficient, or inappropriate. Appropriate defensive medicine reduces the rate of medical injury at a cost less than that of the injuries avoided (as valued by patients or society as a whole, not necessarily by the tort system). This being so, it is good medical care, and ideally it should not be defensive medicine at all. Inefficient defensive medicine prevents some medical injuries but at a cost greater than that of the injuries avoided. Inappropriate defensive medicine does nothing to reduce the number of medical injuries, and thus it is always inappropriate.[7] An example is ordering a test when the care of the patient will not be affected by the results, simply to reduce the perceived risk of liability. Inappropriate defensive medicine may even produce injuries by giving rise to spurious results that must sometimes be investigated or treated in risky ways.

The causes of inefficient and inappropriate defensive medicine are several. Because physicians (and patients) do not bear directly the costs of defensive medicine, they will overspend others' resources to prevent medical injury, thus producing inefficient defensive medicine (though it is possibly efficient to physicians or patients). Physicians often benefit financially by delivering more care, which gives them a further incentive to practice inefficient or inappropriate defensive medicine. Doubts about the accuracy of the malpractice system in determining liability contribute to a perceived need to practice inefficient or inappropriate medicine.

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[7] If inappropriate defensive medicine has some benefits not related to reducing medical injuries, then it must be evaluated on that basis; it cannot be justified as defensive medicine.

Inefficient and inappropriate defensive medicine also comprises efforts to simply reduce the chance of a claim being filed rather than prevent injury. Efforts to avoid claims per se are related to the burden on the physician of defending nonmeritorious claims, the proportion of claims filed that are not meritorious, and the number of such claims that are paid. To the extent that the present system penalizes physicians for nonmeritorious claims being brought or paid, physicians will try to avoid them. These efforts result in inappropriate defensive medicine by definition, since nonmeritorious claims involve unpreventable injuries. Inefficient defensive medicine could even be efficient to the physician, if it reduces the number of claims brought or paid (either meritorious or nonmeritorious). Thus, the accuracy and predictability of the present system in assigning negligence is crucial.

A final cause of inefficient defensive medicine is imperfect knowledge and execution: genuine attempts to reduce preventable medical injury may not work well enough to be efficient. It is not clear how much of defensive medicine is caused by flaws in the malpractice system, and how much is due to imperfect knowledge, beliefs, and responses of health care professionals and institutions.

The extent and cost of defensive medicine are difficult to specify. The definition rests on subjective factors in physician decisionmaking. Identifying appropriate and inefficient defensive medicine requires knowledge of the effectiveness and cost-effectiveness of medical care. However, there is surprisingly little knowledge of the effectiveness of medical care, and cost-effectiveness is a relative determination that can involve difficult value decisions. These factors suggest that adequate estimates of defensive medicine as a whole are unlikely to be made, although it may be possible to quantify some examples of inappropriate defensive medicine.

Although there are no reliable estimates of the cost of defensive medicine,[8] there is much speculation that it could be substantial. The effect of perceived pressure to practice defensive medicine is to lessen cost considerations in medical decisions. A test may be of net medical benefit to a patient yet not be cost-effective from the perspective of the system as a whole. In this circumstance, it can be difficult for physicians to forgo the test when they risk potential liability for not doing it. In addition, the financial incentives of fee-for-service medicine run in the same direction.

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[8] Studies that use physicians' estimates of the amount of defensive medicine they practice are not sufficiently reliable to make quantitative estimates.

It is likely that some defensive medicine practices have become the standard of care adopted by the medical community. Physicians may follow the standard not from fear of lawsuits but from a sincere belief that it represents good medical practice. It is also possible that fear of liability may impede physicians' willingness to practice "down" to a level of care embodied in a practice guideline.

In conclusion, the malpractice system does not appear to be efficient. It may lower the incidence and therefore the cost of medical injury, but it may not do so efficiently. The cost of inefficient and inappropriate defensive medicine has not been well estimated. The system is administratively inefficient; research should focus on how to improve the speed and efficiency of resolving claims without sacrificing accuracy.

Quality of Care

The extent to which the present system improves the quality of care is measured by how well it reduces medical injury (deterrence), contributes to data collection and research on reducing medical injury, promotes good medical decisionmaking, and enhances the human dimensions of medical care.

Negligence-Based Deterrence. The most important function of a malpractice system is to minimize the future incidence of medical injury. Clearly, the threat of malpractice liability strongly motivates physician behavior; the issue is whether that behavior is effective in reducing medical injury. If it is, a further question is whether the system is effective at the margin, or duplicates other factors promoting good medical care.

The present negligence-based fault system ideally deters injury by shifting the cost of losses due to negligent medical injury to medical practitioners or institutions, giving them an incentive to take whatever cost-effective measures (less than the cost of the injuries) are possible to avoid bearing the losses. The underlying model is that economically rational persons or institutions will anticipate what injuries may occur and will expend resources to prevent them, up to the cost of the injuries prevented. For an ideal incentive to be realized, the full cost of all negligently caused medical injury should be transferred accurately and rapidly to those who caused the losses. Nonnegligent medical injuries should be screened out accurately by the system.

In practice, the theoretical incentive communicated by the malpractice system to physicians and hospitals is weakened and distorted by several factors. The first is that only negligent behavior that results in injury is identified and sanctioned: the system ignores the far greater number of times that negligent care fortunately does not result in injury. It is not known how much negligent care is delivered that does not produce injury, but it undoubtedly overshadows the amount of negligent care that produces injury.

A second attenuating factor is that only a fraction of negligent injuries are identified and compensated by the system. Few claims are filed, and even some negligent injuries that result in claims may not be compensated. Only a small percentage of negligent medical injuries is ultimately compensated.

Malpractice insurance further lessens the incentive by shifting economic losses from physicians and hospitals to insurance companies. Few physicians make out-of-pocket payments to claimants. Experience rating can compensate somewhat for this, but there are limitations on how well physicians can be experience rated for malpractice (Rolph 1991; Sloan 1989c).[9]

The malpractice system's deterrence incentive to physicians is distorted by claims made for nonnegligent medical injuries. To the extent that nonnegligent injuries are compensated, doubts arise concerning the ability of the system to distinguish negligence from the appropriate standard of care. An even more important distortion is caused by the fact that it is the filing of a suit, not its ultimate success, that causes most of the burden physicians experience. Even more than the time and income lost in defending a claim, the associated emotional stress probably gives physicians their strongest incentive to avoid malpractice claims. The end result is that avoidance of claims, rather than just negligent medical injuries, is the primary goal of physicians. A survey of physicians indicated that they greatly overestimate the risk of being sued (Harvard Medical Practice Study Group 1990). Such misperceptions also contribute to the distortion of the deterrence incentive.

The inaccuracy of the present system is a major flaw. It is vital for effective reform that the extent of and reasons for its inaccuracy are understood. Research is under way on why negligently injured patients do not file suit. Lack of knowledge that an injury occurred or that it was negligent are surely major factors. Because an imbalance in knowledge between health care professionals and patients is inherent in medicine, it would be desirable for a malpractice system to encourage doctors voluntarily to report incidents of compensable injuries to patients.[10]

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[9] This is because of the relatively small numbers of expected claims per physician. Some uneven distribution of claims can be expected due to chance, which does not necessarily indicate a greater likelihood of future claims. This is true even for high-risk specialties that experience higher numbers of claims per physician, particularly if those specialties' higher claims rates are due to unavoidable bad outcomes rather than a higher rate of negligent injury. Experience rating of larger groups of physicians can help overcome this limitation.

[10] The Moore-Gephart Bill (H.R. 2084, 1989) provided incentives (in the form of limits on damages) to practitioners to make offers of compensation to patients.

Another factor in the inaccuracy of the malpractice system is the difficulty of applying the negligence standard. It is hard for physicians to apply it reliably in retrospective reviews[11] and is probably even harder for clinicians to anticipate prospectively. The inevitable differences between retrospective judgment and prospective decisionmaking contribute to inaccuracy.[12] There is also a difference in some respects between the legal standard of care as applied by juries and what physicians believe the standard of care should be (the professional standard of care). For example, juries may be less forgiving of rare mistakes that inevitably are made by most practitioners at some point in their careers. There may also be a gap between legal and professional notions of causation of medical injury.

Difficulties in proof are another obstacle to accuracy: documentation of information relevant to decisionmaking and the resulting injury is often poor. In the absence of good evidence, the burden of proof can be decisive.[13] Research into how to improve the determination of liability is essential.

Finally, the deterrence threat of malpractice suits is abstract for most physicians; they may gauge the threat of malpractice suits by the amount of malpractice insurance premiums they pay. When premiums rise dramatically while the rate of negligence presumably remains constant, the impression is reinforced that the malpractice system sanctions nonnegligent behavior.

There is enough evidence to conclude that the deterrence incentive of the malpractice system is weakened and distorted in theory. There have been no empirical demonstrations of the existence and magnitude of deterrence conferred by the present system. As a practical matter, the absolute level of deterrence is impossible to measure, since there are no local comparison areas in which there is no malpractice system: only differences at the margin can be detected.[14] The Harvard Medical Practice Study Group (1990) studied local variations in the incidence of negligent injuries and the threat of malpractice suits, but the results were inconclusive.[15] Some studies have found that physicians in specialties that are sued more often (and pay higher malpractice premiums) say they practice defensive medicine more often than do physicians in low-risk specialties, but the reliability of such self-reports is unknown.

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[11] In one study, the reliability of medical reviewers' judgments of negligence was lower than that for causation, and it was particularly low for "close calls" (Brennan 1989). In the Harvard Medical Practice Study, 70 percent of medical injuries deemed negligent were "close calls" (Harvard Medical Practice Study Group 1990), and the overall reliability of the judgments of negligence was poor (Brennan 1991).

[12] Judgments of the propriety of conduct that produced injury are often biased by the fact that the conduct produced injury in this instance. In addition, when the standard of care has changed over time, it can be difficult to avoid judging past conduct by later standards.

[13] The burden of proof can be shifted to the defendant by a legal doctrine called *res ipsa loquitur*.

[14] Studies of marginal differences in deterrence face the conceptual problem of how to incorporate in the analysis the dynamics of changes in malpractice threats, injuries, and efforts to avoid injuries. International comparisons of the rate of negligent medical injury might be of interest, since malpractice threat is lower in many other countries. Such comparisons are subject to other confounding factors, though.

There is no doubt that the present system powerfully motivates physician behavior: the existence of defensive medicine is proof of this. Some measures physicians have taken in response to the threat of malpractice include telling patients more about risks, keeping better patient records, obtaining more consultations, ordering more diagnostic tests, taking better initial histories from patients, scheduling more follow-up visits, providing more preventive services, delegating fewer procedures to nonphysicians, studying the professional literature more regularly, attending more continuing medical education courses, and improving communication with their patients (Owens 1988; Weisman 1989; Charles 1985). The extent to which these measures effectively and efficiently reduce injuries is unknown, although they may improve quality of care.

Data Collection and Research. The present system does not encourage data collection and research on prevention of medical injury; in fact, it discourages this by, in effect, penalizing the reporting of negligent injuries. When patients do not know they have suffered a negligent injury, practitioners and institutions must weigh a perceived ethical obligation to inform patients of negligent injury against the personal and professional costs of doing so. Although the National Practitioner Data Bank will have information on all malpractice claims paid after September 1, 1990, it will possess limited information on each claim. Moreover, claims data do not include the vastly larger number of negligent injuries that do not result in a claim. The present system does not address nonnegligent medical injuries at all, except to attempt to exclude them from compensation.

One of the greatest failings of the present system is that it has produced so little data with which to learn how to avoid medical injury. Each case is decided in isolation; often the results are kept confidential. Except for highly publicized cases and efforts of risk managers, the lessons from each case are often lost on the medical community at large, and patterns of injury are hard to detect. The benefits gained from the limited amount of existing research into negligent injury suggest the potential that full-scale data collection and analysis holds for reducing medical injury (Karcz 1990).

Promoting Good Medical Decisionmaking. Some of the steps taken by physicians to guard against malpractice claims may improve medical decisionmaking, such as the sharing of information and decisionmaking with patients. Inefficient defensive medicine represents poor medical decisionmaking from the perspective of the health care system. But it may be appropriate decisionmaking from the standpoint of a patient who does not bear directly the costs of the reduction in risk of injury.

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[15] Further analysis of their data has reportedly revealed some evidence of a deterrent effect.

Decisions that result in inappropriate defensive medicine never benefit patients, and they may detract from quality of care by actually producing more medical injury. For example, unnecessary diagnostic tests yield some false positive findings that must then be investigated; this can affect treatment and confer unnecessary risk on the patient. Quality of care is lowered when beneficial treatment is withheld because of the risk of complications that might lead to a lawsuit. Medicare beneficiaries may be particularly subject to this because of their higher risk of complications from treatment.

The law of informed consent, which is part of the present malpractice system, tries to improve medical decisionmaking by requiring physicians to disclose to patients the benefits and risks of available treatment options and by requiring patients' consent for treatment to proceed. Although the law of informed consent has contributed to greater use of written consent forms and disclosure of risks, a gap between form and substance remains. Some doubt that the legal doctrine of informed consent can effect truly informed and shared doctor-patient decisionmaking in the face of deep-seated obstacles to this goal (Katz 1985). If effectiveness research and practice guidelines enable the standard of care to be specified more precisely, the doctrine of informed consent might encourage physicians to disclose to patients that the proposed care deviates from the accepted standard. Such discussions could help both patients and physicians.

Access to Care. Quality of care is affected when access to care is impaired. This can occur when physicians limit the scope of their practice or the types of patients they treat. Although quality of care can sometimes be improved when some practitioners cut back on high-risk procedures or patients, this can be outweighed when access becomes a problem. Liability-induced access problems have been most clearly documented among obstetrical and gynecologic physicians, against whom more claims are made than any other specialty (OIG 1989). An Institute of Medicine report concluded that the malpractice problem adversely affects the delivery of obstetrical services, especially to disadvantaged women, those living in rural areas, and those with high-risk pregnancies (Institute of Medicine 1989). Family practitioners have taken similar risk-avoidance actions (Rostow 1989). Other physicians, such as internists, may avoid risky procedures or patients to a lesser degree (Weisman 1989). It is not clear what aspects of the malpractice problem are responsible for the reduction in access.

Access can also be compromised by the high cost of health care. To the extent that the malpractice system drives up the cost of care, it may have an indirect adverse effect on access for some patients.

Human Dimension of Quality of Care. One of the present system's most troubling faults is its intangible effects on the human side of quality of care and the practice of medicine.

The threat of liability is said to hurt the doctor-patient relationship, but there is no more than anecdotal evidence to support this assertion at present. If claims can be avoided by better doctor-patient relationships, then the present system provides a strong incentive for physicians to improve their relationships with patients. On the other hand, predetermined attitudes of patients and physicians may prevent rapport. The increasing fragmentation and specialization of care often present obstacles to a strong doctor-patient relationship.

The malpractice system evokes strong emotional reactions in physicians. In one study, physicians who had been sued, compared with those who had not been sued, reported more emotional symptoms that fell into clusters descriptive of either depressive or stress-induced emotional disturbances (Charles 1985).

The malpractice system clearly lowers physicians' satisfaction with the practice of medicine (Goldstein 1991). It forces them to revisit their own mistakes, which is understandably discomforting. But much of physicians' dissatisfaction stems from the high personal and professional costs of litigating both justifiable and nonmeritorious claims. These costs arise principally because of the nature of the tort system and its failings, including its adversarial, blaming, retributive aspects. A malpractice system incorporating these features will not be able to enlist the voluntary cooperation of physicians in reporting injuries. Physicians have a higher likelihood of being sued than other professionals, and they have usually not been prepared for the experience by their training. Physicians are never going to enjoy being held accountable for their mistakes, but the way the present system operates clearly exacerbates their dislike for it.

Are injured patients treated humanely by the process of gaining compensation under the present malpractice system? There is little evidence on how claimants feel about their experiences. It would be of great interest to know whether they appreciate this method of vindicating their rights or whether another system would be more acceptable. There is evidence that litigation itself is an important deterrent to injured patients seeking compensation (Meyers 1987). Although this holds down internal costs of the malpractice system, it is an indictment of the system that its unpleasantness discourages its use by those who the system was designed to help.

Integration with Other Quality Assurance Systems. The malpractice system is poorly integrated with other mechanisms of quality assurance, although coordination is improving. The National Practitioner Data Bank will ensure that information on paid malpractice claims and disciplinary actions will be available nationwide to qualified requesters. However, the data bank will not distinguish payments to claimants who did not suffer a negligent injury from payments for actual negligence, and there are limits on how useful the limited information in the data bank will be in assessing quality. Ultimately, the value of information about malpractice payments in assessing quality of care depends on how accurately the malpractice system distinguishes and compensates negligently injured patients.

Anecdotal information suggests that the requirement of reporting all payments to the data bank is resulting in fewer settlements of malpractice claims, because physicians may prefer to try for complete exoneration than to settle for a smaller sum and still be reported to the data bank.[16] Similarly, the threshold for starting formal disciplinary actions may have been raised by the reporting requirement.

Accountability

Health care professionals and institutions should be held responsible for the care they deliver. Reforms may affect this function, but in assessing reform it is important to consider the accountability of the malpractice system as well.

Accountability of Health Care Professionals and Institutions. Since few negligent injuries enter the malpractice system as claims, usually no one is held accountable for the injury. Accountability will be improved through the National Practitioner Data Bank, which will prevent physicians subjected to disciplinary actions or malpractice payments from hiding those facts from hospitals or state licensing boards. For those accused of negligence, the experience is often felt to be punitive. Physicians often do not believe their actions warrant the consequences brought on by lawsuits, possibly because of the difference between medical and legal standards of causation and negligence.

Accountability of the Malpractice System. The present system is accountable in some respects. Claimants are entitled to a trial that is governed by law and presided over by an independent judge; judgments can be appealed to an independent judiciary. Lawyers do not always act as officers of the court should, so the tort of malicious prosecution was developed to corral irresponsible use of the tort system.

Some of the participants in the system are less accountable, however. By design, juries are not accountable for their actions. They can make decisions that are not strictly in accordance with the law, and they do not have to explain their reasoning. Their decisions do not have to be consistent with those of other juries. Expert witnesses have come under heavy attack as being unaccountable. There is little accountability for the system as a whole: the legal process is assumed to produce correct results.

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[16] The Secretary of Health and Human Services is required to report to the Congress on whether information respecting small payments should continue to be required to be reported.

EVALUATION OF TORT REFORMS

Within the past 15 years, every state has enacted some type of statutory reform of the tort litigation system (Spernak 1991). Many reforms have made it more difficult for claimants to file and prove claims or limited the amount of damages permitted. These reforms include penalties for filing frivolous lawsuits, limits on attorney contingency fees, pretrial screening panels, shortened statutes of limitation,[17] prohibition of *ad damnum* clauses,[18] subtraction of payments by other (collateral) sources from damage awards, restrictions on the joint and several liability rule,[19] limits on damages, and requirements that large awards be paid over time instead of in a lump sum. Other reforms attempted to improve the quality of medical care or regulate malpractice insurance industry practices.

The effects of tort reform have often been delayed many years by court challenges. However, several studies have made statistical estimates of the effectiveness of reforms in reducing claims frequency and cost and insurance premiums (Zuckerman 1990; Sloan 1989a, 1985; Danzon 1986). They found that caps on damage awards were most effective in reducing claims frequency and cost; offsets of collateral benefits also had an effect. Results were mixed on pretrial screening panels and arbitration: sometimes the effects were opposite to what was intended. The other reforms were not shown to have an effect, except that one study found that penalties for frivolous suits reduced damage awards (Sloan 1989a). By contrast, other effects of tort reform, such as effects on injured patients, have not been well studied.

More importantly, tort reforms tried to date are unlikely to improve significantly the malpractice system's performance in meeting the goals outlined in this chapter. Few reforms improve the determination of liability or the accuracy of damage awards; most deny liability or compensation for meritorious and nonmeritorious claims alike. Pretrial screening panels have had mixed results in decreasing the cost of the system and the time it takes for claims to be resolved, and they do not seem to have improved the determination of liability. Tort reform is generally geared toward excluding claims rather than including in the system the many negligent injuries that presently do not result in claims. Neither deterrence nor defensive medicine is likely to be much affected by tort reform.

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[17] These are laws that limit the time period after an injury during which plaintiffs may bring a lawsuit.

[18] An *ad damnum* clause in the lawsuit filed by the plaintiff in court specifies the dollar amount of damages the plaintiff is seeking. Because large amounts receive media attention regardless of their merit, many states have prohibited plaintiffs from stating specific dollar amounts when filing a lawsuit.

[19] Under this rule, a plaintiff can sue all those who may have played a role in causing an injury and recover the full amount of damages from any defendant or combination of them, no matter what each's contribution was to the injury.

IMPLICATIONS FOR FUTURE REFORM

The deficiencies of the present system are becoming better documented, and its benefits are difficult to demonstrate convincingly. The number of negligent injuries is substantial, few are compensated, and the determination of damages needs to be improved. The system is inefficient and slow, does not promote data collection and research on how to reduce medical injury, and adversely affects physicians and medical decisionmaking. Current evidence is insufficient to specify well enough the marginal deterrence value of the present system, its accuracy in determining liability, its intangible adverse effects on patients and physicians, and the extent and net cost of inefficient and inappropriate defensive medicine. However, many believe these problems are so severe as to warrant major reform.

The system's marginal deterrence value, if any, is its strongest justification. Reforms must provide adequate assurance that cost-effective deterrence will be improved, or at least not lessened. There is a strong need for better ways to identify, study, and reduce the rate of medical injury. An accurate monitoring and reporting system for medical injury would obviate the current reliance on theory and poor evidence to assess deterrence: the rate of injury could simply be determined before and after reforms are implemented.

Some consideration should be given to those negligent medical injuries that are not now compensated by the malpractice system. The cost to a malpractice system of compensating them depends on the level of compensation and the amount provided by collateral sources.

A central issue for reform is whether the system can be made to function better or should be substantially replaced by other systems. The answer may differ for different goals. For quality of care, the malpractice system may or may not reduce the number of negligent medical injuries, but it has clear adverse effects on other aspects of quality of care. The malpractice system should address only a part of the spectrum of quality of care, and its focus may need to be narrowed to reduce its intangible costs and the level of defensive medicine. The determination of negligence needs to be improved and made more efficient, but this may require rethinking the concept of medical negligence. Data collection and research on reducing medical injury should also be greatly enhanced. It is difficult to envision how this could be accomplished by a system tied to tort liability.

Some of the present system's problems may exist partly because compensation is now tied to the determination of negligence. The Commission plans to explore whether this link should be severed to permit different goals to be accomplished by different systems, and to assess proposals for alternative systems of deterrence and compensation. The Commission will also examine federal proposals for malpractice reform and address the federal government's role in malpractice reform.

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APPENDIX A

VOLUME RESPONSES TO CHANGES IN MEDICARE FEES

This appendix reviews the results and methodologies of several studies of Medicare physician fees and the volume of care. Studies of time-series changes in fees and total outlays are examined first. These studies are probably most relevant to establishing the 1992 volume offset because the offset represents the short-run reaction of total volume to a change in fees. After this, cross-sectional studies and studies of individual procedures are presented. For two reasons, these studies are less relevant to the 1992 volume offset. First, the pattern of fees and volume in a cross-section need not reflect the behavior of volume in response to a change in fees. Second, individual procedures often reflect a specific medical technology, and studies of individual procedures do not capture the average impact of fee changes on the entire scope of medical practice.

A recent study by Christensen (1990) is probably the study most relevant to the volume offset issue. It analyzed data from the late 1970s from the Medicare carrier in Colorado. During that period the small payment localities in Colorado were eliminated in favor of a statewide payment locality, creating large changes in fees, both increases (rural) and reductions (urban) at the time of transition. Christensen examined the behavior of volume for nearly 1,000 practices of general practitioners and internists. Practices gaining and losing income from the fee change were analyzed separately. For all practices together, the estimated volume offset was approximately 50 percent, while for gainers and losers, the offsets were 37.5 percent and 55.5 percent, respectively.

While this study clearly is relevant, it has substantial limitations. The data were from a single state (Colorado) and are quite old (1976). Only general practitioners and internists were studied. In addition, the separation between gaining and losing practices was done on the basis of nominal dollars, not deflated dollars. Nevertheless, this study is probably the best available micro-estimate of the response of practice-level volume to large changes in fees.

Rice (1984) was the first to analyze the late 1970s payment changes in Colorado and provided the data for the Christensen study noted above. Rice utilized a simultaneous-equations model including both volume and assignment in order to analyze the impact of fee changes on volume. Using separate regressions for medical services and surgical services and adjusting for numerous confounding variables, Rice found a statistically significant volume offset response for both types of services. However, medical services seemed much more responsive to fee levels than did surgical services. Rice found that the intensity of medical services increased .61 percent for every 1 percent decrease in medical fee levels. Conversely, the intensity of surgical services increased .15 percent and the number of surgical services increased .14 percent, for every 1 percent reduction in surgical fee levels. Rice also found that reductions in fees for medical services resulted in increased volume of surgical services.

Other time-series studies of overall volume changes have been done on a much more macroscopic level. These include Holahan and Scanlon (1979) and Mitchell and others (1989).

Holahan and Scanlon (1979) examined the impact of the early 1970s wage and price controls on the quantity of services provided to Medicare beneficiaries in California. They found that during this period volume per beneficiary increased roughly 10 percent annually. Once price controls were lifted, fees rose substantially and the quantity of services leveled off or in some instances actually declined.

Mitchell and others (1989) examined the growth in volume during the 1984-1986 Medicare fee freeze. They found that expenditures per beneficiary increased almost 30 percent while fees were frozen and that volume increased most rapidly for radiological procedures and diagnostic surgery. However, volume had been trending upward both before and after the period of this analysis. In addition, because of other payment changes occurring over this period, notably the implementation of the prospective payment system and the shift of services to outpatient settings, they found it difficult to offer a definitive interpretation of the volume changes as being driven by the fee freeze.

While both of these studies seem to show a considerable volume response, they are studies of across-the-board fee freezes and cannot effectively control for other changes occurring over the period. The difficulties in interpreting time-series data are illustrated by an analysis of volume trends from the 1990 Supplementary Medical Insurance Trustees Report (Trustees 1990). Real fee growth was much more severely constrained in the five years following 1984 than in the five years preceding it. However, volume growth in that latter period averaged 6.2 percent per year, versus 7.1 percent in the preceding five-year period. The growth in volume over this period probably reflects numerous factors, and any volume offset in response to fee constraint is not easy to identify from the aggregate statistics.

Cross-sectional studies and studies of individual procedures are probably less relevant to the analysis of the volume offset. However, a small number of recent studies of this type are reviewed below.

Holahan and others (1990) looked at 1983 and 1985 cross-sections of fees and volumes for a 5 percent sample of Medicare beneficiaries aggregated to the metropolitan statistical area (MSA) level. In this study, both current fees and prior utilization were included in the regression. Because fee levels were thought to represent both the effects of HCFA policy and the actions of physicians, a two-stage least squares technique was used, with statistical instruments substituted for actual fee levels. The volume increases observed over this period were attributed to the large change in assignment rates and other factors, with little of the increase attributed to the direct effect of fee constraint.

The results of this study may reflect some of the technical aspects of the data and statistical specification. First, the regression is neither cross-sectional nor purely time-series but in effect examines the change in volume from 1983-1985 as a function of the level of (an instrument for) fees in 1985. Second, the regression generating the instrument for fees was not presented. Thus, the factors driving the variation in the fee instrument cannot be assessed. Finally, only a 5 percent sample of beneficiaries was used, and the 1983 and 1985 sources of data were quite different. These factors could have added substantial variability to the data.

Reynolds (1990) performed an analysis of the cross-sectional variation in fees and volume for various groups of services using 1987 Part B Medicare Annual Data (BMAD) procedure file data. Analysis proceeded by regressing expenditures for various groups of procedures (within 193 charge localities) on population, income, and three separate correlates of prices: area medical costs (the Geographic Practice Cost Index), overall area fee level, and the fee level for the procedure group relative to the overall area fee level. Because fee levels were thought to reflect both Medicare policy and physician behavior, actual fees were not used. Instead, a statistical instrument for fees was used in the regression. Reynolds found that the volume response varied considerably across procedure groups. No well-established pattern of volume response was observed in this cross-sectional data.

Some of the econometric aspects of this study may have affected its results. First, three highly correlated explanatory variables were used (income, medical costs, and the two fee variables). The high explanatory power of Reynold's regression coupled with the large number of insignificant coefficients on the fee variables suggests that the regression may not have successfully separated the individual effects of these highly correlated variables. In addition, the need to substitute a statistical instrument for the actual fee levels means that the results may have depended somewhat on the choice of instrument.

Escarce (1990) performed a cross-sectional study of the impact of Medicare fee levels on the volume of services. This study used a 5 percent sample of beneficiaries to analyze the impact of fee levels on the utilization of services per beneficiary across metropolitan statistical areas. Escarce studied volumes for eleven procedures for four surgical specialties and included three price variables: the procedure's own price, the price of other surgical procedures done by that specialty, and the price of office visits. As with the other cross-sectional studies, statistical instruments were substituted for prices in the regression analysis. In five of eleven cases there was a statistically significant link between fee levels and the volume of services. However, some operations showed increased volume and others showed reduced volume in response to a fee cut. Several statistically significant cross-price effects were also found.

Many of the factors affecting the other cross-sectional studies may have influenced this one as well. First, the use of a 5 percent sample to examine individual procedures may have introduced considerable random fluctuation. Second, the specification uses multiple price variables represented by statistical instruments. Hence, the quality and degree of correlation of the instruments may have had an impact on the results.

Escarce (1991) also analyzed the impact of reductions in fees for overvalued procedures arising from the Omnibus Budget Reconciliation Act of 1987. Using the BMAD procedure files, Escarce analyzed the change in volume between 1987-1988 for the 12 procedure groups identified as overvalued. Fees for these procedures were reduced up to 17 percent in various areas of the country. As with the cross-sectional work, results from this analysis were mixed, showing some increases, some decreases, or no statistically significant impact of fee reductions on individual procedures.

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APPENDIX B

COMMISSION MODEL CODING SYSTEM FOR GENERIC VISITS

CLASSES OF VISITS

The Commission's model coding system recognizes 12 classes of visits: new and established patient office visits, initial and subsequent hospital visits, initial and follow-up consultations, initial and subsequent nursing facility visits, initial and subsequent rest home visits, and new and established patient home visits. This allows payment per level of service to vary, reflecting differences in effort (work per unit time) and practice costs, for different types of visits and for visits in different sites.

Definitions of Classes of Visits

NEW PATIENT (ambulatory settings) -- A visit with a patient who is new to the physician's practice or who has not been seen within the past three years. The transfer of care from one physician to another constitutes a new patient visit.

ESTABLISHED PATIENT (ambulatory settings) -- A visit with a patient who has been seen by the physician's practice within the past three years. Concurrent care constitutes an established patient visit.

INITIAL CARE (inpatient settings) -- The initial visit by the admitting physician in which the medical record is established for an admission. The transfer of care from one physician to another constitutes initial care.

SUBSEQUENT CARE (inpatient settings) -- Follow-up visits in an institution during an inpatient stay. Concurrent care constitutes subsequent care.

INITIAL CONSULTATION (all settings) -- A visit in which a physician, at the request of another health care provider, renders an initial opinion regarding a specific problem.

If a consultant initiates diagnostic or therapeutic services, the service qualifies as a consultation. But the consultation code encompasses only the evaluation and management services that are provided.

The consultant must document the need for the consultation, his or her opinion, and any services that have been ordered or performed. In addition, the consultant must document that this information has been communicated to the health care provider who requested the consultation.

The transfer of care from one physician to another does not constitute a consultation. This service should be coded as new patient / initial care.

FOLLOW-UP CONSULTATION (all settings) -- Follow-up visits by the consultant that are required to complete the evaluation of the patient's problem. Other follow-up visits by the consultant for the same problem should be coded as established patient/subsequent care visits.

LEVELS OF SERVICE

In the model coding system, visits in each class are differentiated by five levels of service (Table B-1). The same five levels of service apply to all classes of visits.

The levels of service are defined on the basis of content and time.

- The content descriptors reflect the complexity of medical decisionmaking and the extent of EM services provided during visits.
- The time is "typical physician encounter time." In outpatient settings, this reflects the time it takes physicians, on average, to perform the face-to-face portion of the content of each level of service. In inpatient settings, it reflects the time it takes physicians, on average, to perform the portion of the content of each level of service that takes place at the bedside and on the patient's unit or floor.

Table B-1. Commission Model Levels of Service

Level 1	Level 2	Level 3	Level 4	Level 5
Evaluation and management of a problem with straightforward diagnosis and treatment.	Evaluation and management of a problem requiring the consideration of a limited number of potential diagnoses or treatment options.	Evaluation and management of a *single* problem requiring the consideration of multiple potential diagnoses or treatment options. **OR** Evaluation, management, and integration of *several* straightforward problems.	Evaluation and management of a complex *single* problem requiring the consideration of an extensive differential diagnosis and multiple treatment options. **OR** Evaluation and management of *multiple* problems requiring a complex management plan integrating multiple therapies and/or care among multiple providers.	Evaluation, management, and integration of one or more highly complex problems requiring extensive skill and judgment, including the consideration of an extensive differential diagnosis and multiple treatment options.
This visit includes minimal or no history and physical examination, counseling, diagnostic testing, or coordination of care.	This visit includes a problem-focused history and physical examination and/or counseling, diagnostic testing, and coordination of care.	This visit includes a detailed single-system or general multisystem history and physical examination and/or counseling, diagnostic testing, and coordination of of care.	This visit includes a comprehensive single-system or detailed multisystem history and physical examination and/or counseling, diagnostic testing, and coordination of care.	This visit includes a comprehensive single-system or multisystem history and physical examination, review of data from multiple sources, and/or counseling, diagnostic testing, and coordination of care.
The typical encounter time for a Level 1 visit is *5 minutes*.	The typical encounter time for a Level 2 visit is *15 minutes*.	The typical encounter time for a Level 3 visit is *30 minutes*.	The typical encounter time for a Level 4 visit is *45 minutes*.	The typical encounter time for a Level 5 visit is *60 minutes*.
For outpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services face-to-face with the patient and/or family.	For outpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services face-to-face with the patient and/or family.	For outpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services face-to-face with the patient and/or family.	For outpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services face-to-face with the patient and/or family.	For outpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services face-to-face with the patient and/or family.
For inpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services at the bedside and on the patient's unit or floor.	For inpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services at the beside and on the patient's unit or floor.	For inpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services at the bedside and on the patient's unit or floor.	For inpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services at the bedside and on the patient's unit or floor.	For inpatient visits, typical encounter time refers to the time physicians spend, on average, performing EM services at the bedside and on the patient's unit or floor.

SPECIAL PATIENT CHARACTERISTICS/NEEDS

Since it may take longer to provide the content of a level of service for patients with communication barriers, disabling cognitive or physical impairments, or an unusual need for counseling or coordination of care, the Commission recommends that physicians be allowed to code for these visits using a special patient characteristics/needs modifier. Special patient characteristics/needs should be documented in the medical record. However, documentation of stable, chronic special patient characteristics and needs should not be required at each visit.

Definitions of Special Patient Characteristics/Needs

COMMUNICATION BARRIERS -- Impairment of hearing, vision, speech, or language sufficient to interfere with understanding of the medical interview or instructions by the physician's staff. Impairment must be severe enough to require use of special communication methods, such as amplifiers, communication boards, large type instructions, written communication, or translators. Use of special communication methods must be documented in the medical record.

COGNITIVE IMPAIRMENT -- Moderate to severe impairment of cognition as measured by formal mental status evaluation using: (1) a standardized mental status questionnaire, such as the Folstein Mini-Mental State Exam or the Pfeiffer Short Portable Mental Status Questionnaire; or (2) a clinical interview documenting disorder of memory, comprehension, calculation, abstraction, or judgment.

PHYSICAL IMPAIRMENT -- Chronic impairment requiring the assistance of another person or assistive devices to complete two or more of the following activities of daily living: bathing, dressing, grooming, eating, transfers, or toileting. Documentation of impairment must be made during the medical interview or by use of standard questionnaires, such as the Lawton Physical Self-Maintenance Scale or the Katz Activities of Daily Living Scale.

APPENDIX C

THE HUMAN CAPITAL THEORY

The Commission has chosen the human capital approach to calculate payment differentials between each nonphysician practitioner category and physicians. Differentials are based on calculations of the differences in earnings that would be expected because of differences in education and training. Calculated differences in percentage terms can be applied to the physician work component of the Medicare Fee Schedule to determine nonphysician payment levels. These calculations are based on an assumed rate of return that could be realized from other investments, called the discount rate.

The concept of human capital was developed in the late 1950s to explain why income in the United States was growing more rapidly than could be accounted for by the growth in physical capital and labor. In 1964, Gary Becker published his now-famous book *Human Capital*, which presents both theoretical and empirical analyses of the relationship between education and earnings. This book stimulated a flood of research into the economics of education and other human capital investments such as on-the-job training. The concept of human capital investment now underlies much economic research, especially in the field of labor economics.

The idea underlying the human capital concept is that resources devoted to increasing an individual's skills or knowledge, such as education, can be thought of as investment in future income. Income is not limited to monetary compensation, but includes the psychic benefits from any undertaking. For example, most people derive monetary income from their jobs and psychic income from leisure activities such as sports and travel. Most theoretical discussions of human capital include all forms of income as the result of the stock of human capital that individuals are endowed with at birth and any subsequent investment in human capital.

An individual's pool of skills and knowledge are the inputs he or she can use to create a product, whether a good or service or leisure activity, which will generate monetary or psychic income. This is similar to a manufacturer's use of physical capital to create a product that generates revenue. In this case, the decision to buy a new piece of equipment is based on the expected rate of return to the initial investment. The cost of using the equipment is weighed against the additional revenues that it will produce over its productive life. New equipment is only bought if the expected increase in revenues over last item is based on an assumption about the discount rate, or prevailing rate of return to alternative investments. This assumption is important, because it can have a large impact on the estimated cost of the investment.

Using the same analysis with regard to human capital has led to many estimates of the implicit return in earnings from investments in different levels of education. (One obvious weakness of these analyses is that they cannot include the psychic income that people derive from their work and leisure activities, since it is not easily measured.) To determine the return to the investment in a college education, the earnings of those with a college education are compared to the earnings of those with no college experience. The investment cost of college is given by the cost of tuition, the opportunity cost of college (which is the loss of earnings that occurs while one is in college rather than working), and returns that would have accrued if the investment had been made in municipal bonds instead of college. (The consumptive utility and psychic income that some may associate with college cannot be valued and so is not included in the calculation.) The difference in lifetime earnings between those with no college experience and those with some college education represents the increase in income that apparently results from the investment in college. The (financial) profitability is determined by the difference between the value of the total investment and this earnings differential. The rate of return, net of the discount rate, must be greater than zero for the investment to be profitable.

These calculations can also be done by using the discount rate as a benchmark for the chosen investment and ignoring alternative investment opportunities as a cost. Under this approach, the cost of the investment in education is simply the tuition and opportunity cost. The rate of return to the investment is calculated from earnings information. If this calculated rate of return is greater than the discount rate, the investment in education was profitable relative to other alternatives. This is quantitatively equivalent to the net rate of return calculation described above.

Empirical studies have found that, in general, there are diminishing returns to additional education. The return to elementary school education is highest and the return to graduate studies (excluding professional degrees) lowest. As the average amount of schooling grew quickly in the first half of this century, the estimated return to each level of education dropped steadily but leveled off after World War II.

As described above, most calculations involving human capital investment involve determining the rate of return implicit in the earnings that result from different levels of education. However, in the course of determining payment levels for nonphysician practitioners, the task is slightly different. In particular, the Commission is trying to set fair payment levels, given different levels of education. To determine fair payments, it is necessary to determine what rate of return nonphysician practitioners should realize on their investment in education. One measure that could be used is the rate of return to education realized by all professionals with post-college education, excluding physicians and attorneys. This would ensure that nonphysician practitioners earn a return comparable to other professionals. An alternative is to use the rate of return that physicians earn on their education. In Chapter 10, estimates of the adjustment factor for work for physician assistants are presented for both the physician and other professional rates of return.

APPENDIX D

PHYSICIAN PAYMENT IN GERMANY

Many elements of physician payment in Germany are relevant to the Commission's work and to overall reform of the U.S. health care system. Believing that there are lessons to be learned, representatives of the Commission and others in the health care community, both within and outside government, in July 1990 visited the Federal Republic of Germany. They interviewed government officials, representatives of sickness funds (statutory health insurers), private insurers, and physician organizations.[1]

The object of the visit was not to decide whether the German health care system should be replicated here. Rather, the goal was to learn about German approaches to physician payment in order to stimulate thinking on issues such as further development of Volume Performance Standards (VPS), organization of utilization review and quality assurance activities, and refinement of the Medicare Fee Schedule.

The following aspects of the German system merit the Commission's attention:

- The federal government makes decisions on major issues that shape the health care system, but is not involved in the details. These are negotiated between payers and providers or left to statutory organizations of physicians.

- More aggressive attempts to slow growth in expenditures have been undertaken in recent years, and these appear to have been successful. Recent federal legislation has directed that the contribution rate for statutory health insurance (a percentage of wages paid by both employers and employees) be stabilized. The contribution rates have in fact leveled off and are projected to fall. Cost containment has been more successful for ambulatory physician expenditures than for other components of health

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[1] Representing the Physician Payment Review Commission were Tom Reardon and Uwe Reinhardt, both Commissioners, and Paul Ginsburg, Executive Director. This report was presented to the Commission in September 1990.

- With the exception of certain services that are being encouraged (such as preventive services and certain ambulatory surgeries), the conversion factor for physician services is based on an expenditure cap. The conversion factor is not determined until after the number of relative value units billed has been tallied. Physicians receive interim payments based on services provided in the past.

- Associations of sickness fund physicians not only negotiate with sickness funds on fee schedules, but have a role that is comparable to that of Medicarer carriers and Peer Review Organizations. They pay physicians and review quality and utilization. They review physicians' decisions concerning hospital admissions and drug prescribing, as well as services they deliver. While clinical autonomy is not unlimited, the trade-off between economic freedom and clinical autonomy is made largely by the physician associations, which then review practice decisions in ways that are acceptable to their membership.

- Virtually all citizens are covered by health insurance, which is financed by contributions from employees and employers that are based on earnings. For those that are unemployed, retired, disabled, or poor, the relevant social insurance funds act as employers in making contributions. When a person changes jobs or becomes unemployed, there is usually no change in health insurance benefits.

- The German system has problems. Hospital stays are too numerous and too long. Prescription drugs are overused and prices are very high. A physician surplus is growing very rapidly. German academics that spoke to the delegation doubt that the difference in the percentage of gross national product devoted to health care between the United States and West Germany is as large as the Organization for Economic Cooperation and Development figures suggest. They believe the figures are not comparable.

THE HEALTH CARE DELIVERY SYSTEM

Many aspects of health care delivery in Germany are similar to those in the United States. Ambulatory physicians are in private practice and are paid on a fee-for-service basis. Hospitals are owned by private nonprofit entities, state and local governments, and for-profit entities. The key difference in delivery is that ambulatory physicians cannot practice in hospitals. Patients are admitted to a hospital only through referral by an ambulatory physician. Their care is then provided by a physician who is a salaried employee of the hospital. Department chiefs, however, see outpatients on a fee-for-service basis and often involve other staff physicians in this practice.

For 90 percent of the population, health services are financed through a system of statutory sickness funds, which dates to Bismarck. Employees with earnings below 4,700 deutche marks (about $3,000) per month must enroll in a sickness fund. In each region, there are separate funds for blue-collar and white-collar employees. Some employees have a choice between the fund for their locality and a fund for their employer. (For example, there is a sickness fund for Daimler-Benz employees.)

This gives rise to selection patterns--the sickness fund of a high-wage employer with a relatively young work force might have a lower contribution rate than the fund for the locality. The federal government recently began directing transfers among sickness funds to offset different proportions of retirees.

Employers and employees each pay half of the cost. The combined contribution rate currently averages 12.9 percent of payroll, but ranges from 8 percent to 16 percent. Monthly earnings above 4,700 deutche marks are not subject to this contribution.

The benefit structure is extremely broad. There is no cost sharing for hospital or physician services. Prescription drugs are covered except for a small copayment. Recuperation in spas is covered but long-term care is not. Balance billing is not permitted.

The self-employed and employees earning more than the threshold may purchase private insurance. Private insurance consists of individual policies that are rated according to age and number of dependents, but not earnings. They resemble whole life insurance, in that premiums exceed the actuarial value of the benefits during the early years of one's enrollment and are lower during later years. Premium increases over time reflect general increases in health care costs but not an enrollee's aging. Employed persons whose earnings currently exceed the sickness fund threshold because of a wage increase can choose whether to remain in the statutory system or purchase private insurance, but cannot return to the statutory system if they leave it. Those with the highest earnings and the smallest families are most likely to opt for private insurance.

PHYSICIAN PAYMENT

Ambulatory physicians are paid by their local association of sickness fund physicians (*Kassenertliche Versorgung* [KV]). Physicians must enroll in their local KV if they are to be paid under the statutory insurance system. Payment is based on a fee schedule. The relative value scale is a national one and is developed through negotiation between the federal association of KVs and the federal association of sickness funds. The conversion factor is determined by the expenditure cap, the size of which is also determined by negotiation.[2]

Negotiation plays a key role in many aspects of physician payment. Germans emphasize the virtue of all parties getting some of what they want. The fact that negotiations proceed year after year, with the same principals involved, may contribute to the quality of the results of the process. Arbitration is required if an agreement cannot be reached. Neither the physicians nor the sickness funds consider arbitration an attractive option, so impasses are almost always avoided. In addition, the federal government is sometimes called on to resolve, through legislation, major policy issues that the parties are unable to deal with through negotiation.

A key aspect of the negotiations is the role played by Concerted Action. This is a national committee that is chaired by the Minister of Labor and Social Affairs. Its members represent the statutory sickness funds, private health insurers, physicians, dentists, employers, and unions. Concerted Action makes policy recommendations that influence both the federal government, which writes legislation on health care financing every three to five years, and the annual negotiations between sickness funds and the various provider organizations. The parallels between Concerted Action and the Commission are noteworthy.

The most recent emphasis of national policy has been cost containment. A 1989 law directs that the contribution rate should no longer increase as a percent of payroll. This law completes a turnabout from a policy of setting the contribution rate to provide the funds that are needed to one of pursuing enough cost containment actions to limit expenditures to the predetermined contribution rate. For ambulatory physician expenditures, most of the implication of this emphasis is that the expenditure caps will increase more slowly. In other areas, such as pharmaceuticals, specific legislation is required to contain costs. Policies for the latter have included institution of a copayment and a reference price system.

The national relative value scale is partially resource based. The relative values for services that involve mostly physician inputs are set on the basis of goals for the relative incomes of specialties. Thus, relative values for evaluation and management services were recently increased because of a judgment that general practitioners' incomes were too far below those of specialists. The national association of sickness fund physicians prides itself on its models to simulate the impact of relative value changes on incomes by specialty.

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[2] As discussed above, certain services are not included in the expenditure cap. Their conversion factor is set in advance. These tend to be services in which excessive volume is not a concern. Removal of services from the expenditure cap is seen as a reward to physicians for their contributions to cost containment in services that they prescribe.

When substantial nonphysician inputs, such as equipment, are involved, relative values are set to reflect these costs. For equipment that need not be in the typical physician's office, such as that for magnetic resonance imaging, unit costs are estimated on the basis of full-time utilization. For equipment that is generally in each physician's office, a lower degree of utilization is assumed. In some cases, a sliding scale is used, so that practices that provide fewer units of a service receive a higher fee for each unit.

The conversion factor is determined on the basis of negotiations between the local KV and sickness funds. More precisely, the negotiation determines the per enrollee amount that is paid to the KV for ambulatory physician services. The conversion factor is then determined on the basis of the number of units of service that are paid. A KV will typically have a different conversion factor for each sickness fund with which it negotiates.

Private insurers negotiate at the national level with the German Chamber of Physicians (*Bundesarztekammer*). Typically, the relative value scale is the same as that negotiated by the national association of statutory sickness funds and the national association of KVs. However, the conversion factor is much higher, perhaps double. In addition, physicians are able to bill the insurer a higher amount in specific instances if they document why the service was particularly difficult or time consuming. Many believe that physicians are more responsive to privately insured patients as a result of the higher fees. Only 10 percent of the population is covered by private insurance, however.

ROLE OF PHYSICIAN ORGANIZATIONS IN CLINICAL MEDICINE

Physician organizations play a more important role in clinical practice in Germany than in the United States. Before discussing this, it is important to describe the organizations. Already mentioned were the associations of sickness fund physicians. The German Chamber of Physicians, which also has mandatory membership, deals with licensure and medical education, as well as negotiation with private insurers. It does not engage in political action. Other national organizations, in which membership is voluntary, represent the political interests of physicians. Finally, many physicians belong to specialty societies, which play a role limited to clinical education. They do not play the role in payment policy that the larger American specialty societies do.

The KVs review utilization and monitor quality of care. In recent years, the key tool in utilization review has been physician profiling. Physicians' rates of use of services per patient encounter are compared to those of their peers. These reference groups appear to be quite refined and break down at least by specialty and by urban and rural. Only those physicians who perform a particular procedure, such as ultrasound, are included in the reference group. Those physicians whose rates of use exceed the average by 50 percent have payments reduced unless they can satisfy the reviewers that their patient mix is unusual. When this threshold is exceeded, the burden of proof is on the physician. During a year, about 7 percent of physicians are called on to explain high use; about 2 percent have payment reductions.

Recent legislation directs the KVs to randomly select 2 percent of physicians each quarter for intensive review of not only the necessity of their own services but also of the services they prescribe. Physicians are at financial risk for the costs of prescribed services that are judged unnecessary. This step has not yet been implemented, as methods are being worked out.

Savings from review of physician services automatically go to increase the conversion factor, since fewer services need to be paid out of the fixed pot of money. However, savings in hospital and pharmaceutical costs that come from review do not benefit physicians directly. On the other hand, slowing growth in these categories of expenditures in the context of a fixed contribution rate is likely to result in a more generous payment for physician services.

Under the expenditure cap, KVs face a clear trade-off that more effective review will lead to higher conversion factors. But review is not left entirely to the KVs. Since physicians are not at collective risk for spending for hospital services and pharmaceuticals, the sickness funds play a role in how the review is managed. In addition, the recent legislative directive for review of a random sample of physicians reflects the federal government's directing the KVs to pursue more extensive utilization review.

IMPLICATIONS FOR MEDICARE

As stated at the beginning of this report, a debate on whether the current U.S. system should be replaced by the German system (as opposed to the Canadian system) is not likely to be fruitful. Such a debate would not only focus on an option that is not realistic, but would also lend itself to errors in logic. In discussions of Canada, for example, many would identify a shortcoming of the Canadian system and then infer that it was caused by the element of the system that they most opposed adopting in the United States. A more fruitful focus would be on aspects of the German system that inspire particular directions for evolution of recent physician payment reforms.

The combination of expenditure caps and the extensive role played by the associations of sickness fund physicians is particularly intriguing. Through this mechanism, society is able to judge what resources to devote to these services and let the medical profession decide how to make the best of this constraint. The physician associations then make policies dealing with relative incomes of their members and proceed to implement policies of utilization and quality review that are acceptable to practitioners. German physicians are thus able to make trade-offs between incomes and clinical autonomy. If such an approach were pursued in the United States, physicians would likely have many more tools than their German counterparts to deal with costs--effectiveness research, practice guidelines, and more sophisticated mechanisms of review, to name a few.

This mechanism certainly does not work flawlessly. One frustration of German physicians is their lack of control over physician supply. Greater supply will reduce per physician income, either through spreading the workload more thinly or through increases in service volume reducing fees. Moreover, little analysis has been performed on the effectiveness of the review mechanisms used to date.

One implication is that with Volume Performance Standards, Medicare ought to be seeking ways to provide physician entities with more autonomy concerning review activities. The more firmly the relationship between volume change and fee change is established, the more discretion can be delegated to physician organizations. Whether existing physician organizations or new ones should be called on is worth discussion. In any case, membership in an entity that performs these functions should probably be required.

The potential for increasing the role of physicians should lead to a resumption of the debate on how to move from a national VPS to subnational ones. The German model is to organize physicians by state. This does not imply that it is better than the specialty model, but it suggests that at least the state model is workable.

The German system suggests that all-payer systems can be somewhat decentralized. Sickness fund negotiations with physician associations are coordinated by the recommendations of Concerted Action and policies enunciated in federal legislation. The relative values are uniform, but the payment rates are permitted to differ. Even a sharp difference in rates between the private insurers and the sickness funds is tolerated, though many would be very concerned about breaching the German principle of solidarity if such a differential persisted in the event that the proportion of the population covered by private insurance were to increase substantially.

As the potential for all-payer systems in the United States is explored, consideration needs to be given to a decisionmaking mechanism that reflects the interests of both public and private payers and the providers of services. The notion of an all-payer system dominated by the intimate link between federal budget policy and Medicare payment policy makes providers leery of such arrangements.

Turning to a more technical issue, the way in which practice costs are handled in the German relative value scale is very instructive. The distinction between equipment that should be in most physicians' offices and that which should be employed only in the most efficient settings is a very useful one. Indeed, the Commission made such a judgment in its report on mammography screening (PPRC 1989).

REFERENCE

Physician Payment Review Commission, *The Costs of Providing Screening Mammography*, Report to Congress No. 89-2, Washington, DC, 1989.

APPENDIX E

COMMISSION RESPONSIBILITIES MANDATED BY CONGRESS FROM 1985 THROUGH 1990

The Physician Payment Review Commission was established by Congress through the Consolidated Omnibus Budget Reconciliation Act of 1985 (P.L. 99-272). It was charged with advising and making recommendations to the Congress on methods to reform payment to physicians under the Medicare program. Recommendations were to be submitted to the Congress no later than March 1 (amended to March 31 by the Omnibus Budget Reconciliation Act of 1987) of each year.

The legislation identified eight specific areas that the Commission should address in its recommendations to the Congress, including the feasibility of reducing specialty and geographic differences in payments, increasing physician participation in the Participating Physician and Supplier Program, the feasibility of physician diagnostic-related groups, and the appropriate utilization of assistants-at-surgery. The legislation also required that the Commission advise and make recommendations to the Secretary of Health and Human Services (HHS) regarding the development of a resource-based relative value scale for physician services.

In the Technical and Miscellaneous Revenue Act of 1988 (P.L. 100-647), the Congress further specified that the Commission consider policies for moderating the rate of increase in physician expenditures and utilization of physician services.

With the passage of physician payment reform legislation in the Omnibus Budget Reconciliation Act of 1989 (OBRA89), the Commission took on new responsibilities: advising the Congress on setting standards for expenditure growth and updating fees, commenting on reports by the Secretary on issues related to utilization, access, and assignment policy, and conducting a series of mandated studies. These studies included payment for practice expenses, geographic payment areas, payment for nonphysician practitioners, physician payment under Medicaid, and payment for assistants-at-surgery.

The Congress further revised the Physician Payment Review Commission's responsibilities as part of OBRA90. It repealed the requirements relating to the development of the relative value scale, while expanding the Commission's responsibilities in other areas.

Under OBRA90, the Commission is required to consider policies under Medicare including:

- major issues in implementation of the Medicare Fee Schedule;
- further development of the volume performance standard system, including development of state-based programs;
- payment incentives to increase access to primary care and other services in inner-city and rural areas, including federal policies regarding the level of Medicaid payments to physicians;
- the supply and specialty distribution of physicians and financing of graduate medical education;
- utilization review and quality of care, including the effectiveness of peer review organizations and other quality assurance programs;
- options to constrain the costs of health care to employers, including incentives under Medicare; and
- medical malpractice reforms and physician licensing and certification.

The Commission is also to comment on the President's budget recommendations affecting physician payment under Medicare.

GLOSSARY

ACRONYMS

AAPA	American Academy of Physician Assistants
AAPCC	Average Adjusted Per Capita Cost
ABMS	American Board of Medical Specialties
ACP	American College of Physicians
ACS	American College of Surgeons
AFDC	Aid to Families with Dependent Children
AHCPR	Agency for Health Care Policy and Research
AHEC	Area Health Education Center
AHPB	Adjusted Historical Payment Basis
AMA	American Medical Association
AORN	Association of Operating Room Nurses
ARCH	Affordable Rural Coalition for Health
ARF	Area Resources File, Bureau of Health Professions, Health Resources and Services Administration, U.S. Public Health Service
ASA	American Society of Anesthesiologists
ASPE	Assistant Secretary for Planning and Evaluation, HHS
AST	Association of Surgical Technologists
BDMS	Bureau of Data Management and Strategy, HCFA
BHP	Bureau of Health Professions, HHS
BMAD	Part B Medicare Annual Data Files
BPO	Bureau of Program Operations, HCFA
BQC	Bureau of Quality Control, HCFA
CBO	Congressional Budget Office
CBS	Current Beneficiary Survey
CF	Conversion Factor
CHER	Center for Health Economics Research
C/MHC	Community and Migrant Health Center

CMP	Competitive Medical Plan
CNM	Certified Nurse Midwife
CP	Clinical Psychologist
CPR	Customary, Prevailing, and Reasonable
CPT	Current Procedural Terminology
CRNA	Certified Registered Nurse Anesthetist
CSW	Clinical Social Worker
CV	Coefficient of Variation
CWF	Common Working File
DO	Doctor of Osteopathy
DRG	Diagnosis-Related Group
EKG	Electrocardiogram
EM	Evaluation and Management
EMC	Electronic Media Claim
EOMB	Explanation of Medicare Benefits
FFS	Fee-for-Service
FMAP	Federal Medical Assistance Percentage
GAF	Geographic Adjustment Factor
GAO	U.S. General Accounting Office
GMENAC	Graduate Medical Education National Advisory Committee
GPCI	Geographic Practice Cost Index
HCFA	Health Care Financing Administration
HCPCS	HCFA Common Procedure Coding System
HHS	Department of Health and Human Services
HI	Hospital Insurance Program (Medicare Part A)
HIS	Health Interview Survey
HMO	Health Maintenance Organization
HPSA	Health Professional Shortage Area
HSQB	Health Standards and Quality Bureau, HCFA
HSUS	Health Services Utilization Study (RAND)
ICD-9	International Classification of Diseases--Ninth Edition
IPA	Independent Practice Association
JCAHO	Joint Commission on the Accreditation of Healthcare Organizations

LCL	Lowest Charge Level Limit
LLP	Limited License Practitioner
MAAC	Maximum Allowable Actual Charge
MAF	Medical Assistance Facility
MEI	Medicare Economic Index
MFS	Medicare Fee Schedule
MGMA	Medical Group Management Association
MSA	Metropolitan Statistical Area
MUA	Medically Underserved Area
NAMCS	National Ambulatory Medical Care Survey
NCHS	National Center for Health Statistics
NCHSR	National Center for Health Services Research
NGA	National Governors' Association
NHDS	National Hospital Discharge Survey
NHSC	National Health Service Corps
NMCES	National Medical Care Expenditure Survey, 1977
NMCUES	National Medical Care Utilization and Expenditure Survey, 1980
NMES	National Medical Expenditure Survey, 1987
NP	Nurse Practitioner
NPP	Nonphysician Practitioner
OACT	Office of the Actuary, HCFA
OIG	Office of the Inspector General, HHS
OPHC	Office of Prepaid Health Care, HCFA
PA	Physician Assistant
PAR	Participating Physician and Supplier Program
PCF	Patient Compensation Fund
PHS	U.S. Public Health Service
PLI	Professional Liability Insurance
PPCIS	Physicians' Practice Cost and Income Survey
PPO	Preferred Provider Organization
PPRC	Physician Payment Review Commission
PPS	Prospective Payment System
ProPAC	Prospective Payment Assessment Commission

PRO	Peer Review Organization
QA	Quality Assurance
QMB	Qualified Medicare Beneficiary
RBRVS	Resource-Based Relative Value Scale
RHC	Rural Health Center
RPCH	Rural Primary Care Hospital
RVS	Relative Value Scale
RVU	Relative Value Unit
SEM	Standard Error of the Mean
SMI	Supplementary Medical Insurance Program (Medicare Part B)
SMS	Socioeconomic Monitoring System
SSI	Supplemental Security Income
TW	Total Work
UCR	Usual, Customary, and Reasonable
UI	Urban Institute
URVG	Uniform Relative Value Guide
VPS	Volume Performance Standard

LEGISLATION (Listed Chronologically)

OBRA80	Omnibus Budget Reconciliation Act of 1980, P.L. 96-499, enacted December 5, 1980.
TEFRA	Tax Equity and Fiscal Responsibility Act of 1982, P.L. 97-248, enacted September 3, 1982.
DEFRA	Deficit Reduction Act of 1984, P.L. 98-369, enacted July 18, 1984.
COBRA	Consolidated Omnibus Budget Reconciliation Act of 1985, P.L. 99-272, enacted April 7, 1986.
OBRA86	Omnibus Budget Reconciliation Act of 1986, P.L. 99-509, enacted October 21, 1986.

OBRA87	Omnibus Budget Reconciliation Act of 1987, P.L. 100-203, enacted December 21, 1987.
MCCA	Medicare Catastrophic Coverage Act of 1988, P.L. 100-360, enacted July 1, 1988, repealed December 13, 1989.
OBRA89	Omnibus Budget Reconciliation Act of 1989, P.L. 101-239, enacted December 19, 1989.
OBRA90	Omnibus Budget Reconciliation Act of 1990, P.L. 101-508, enacted November 3, 1990.

TERMS

Access: The ability to obtain needed medical care.

Actual Charge: One of the factors determining a physician's payment for a service under Medicare; equivalent to the billed or submitted charge. See Customary, Prevailing, and Reasonable.

Adjusted Average Per Capita Cost (AAPCC): An estimate of the average per capita cost incurred by Medicare per beneficiary in the fee-for-service system, adjusted by county for age, sex, and program entitlement.

Adjusted Historical Payment Basis (AHPB): The AHPB for a service in a locality is the average payment for that service under the current system.

Allowed Charge (Approved Charge): Payment for a physician service under CPR, includes the payment from Medicare and the beneficiary's coinsurance, but not any balance bill. See Balance Bill; Coinsurance; Customary, Prevailing, and Reasonable.

Assignment (Medicare): The term used to refer to a physician's decision to accept Medicare's allowed charge as payment in full; a guarantee not to balance bill. See Balance Billing/Extra Billing, Nonparticipating Physician, Participating Physician and Supplier Program.

Assistant-at-Surgery: An individual who has the necessary qualifications to participate in a particular operation and actively assists in performing the surgery.

Balance Bill/Extra Bill: Physicians' charges exceeding the Medicare-allowed charge.

Beneficiary: A person eligible for benefits under an insurance plan. Under Part B of Medicare, Americans over 65, many disabled individuals, and certain individuals with end-stage renal disease can become beneficiaries by paying a monthly premium.

Beneficiary Survey: A 1988 survey of a national sample of beneficiaries regarding assignment, participation, balance billing, and understanding of the Medicare program. The survey was sponsored by PPRC and conducted by Mathematica Policy Research.

Carrier (Medicare): A private contractor who administers claims processing and payment for Part B services. See Part B (Medicare).

Coding: A mechanism for identifying and defining physician services.

Coinsurance: The portion of the balance of covered medical expenses which a beneficiary must pay after payment of the deductible. Under Medicare Part B, the beneficiary pays coinsurance of 20 percent of allowed charges. See Deductible.

Common Working File (CWF): A new HCFA data reporting system which will combine both Part A and Part B Claims in a common file. The CWF becomes fully operational beginning FY 1991.

Competitive Medical Plan (CMP): A health plan that is eligible under TEFRA 1982 to enter into a Medicare risk contract in return for a capitation payment, but which does not satisfy the requirements to be a federally qualified HMO. See Capitation, Federally Qualified HMO.

Conversion Factor: The multiplicative factor applied to the relative value scale to produce a schedule of dollar amounts of payment for physicians.

Cost Sharing: The portion of payment for health expenses that the beneficiary must pay, including the deductibles, copayments, coinsurance, and extra bill. See Deductible, Copayment, Coinsurance, and Balance Billing.

Current Procedural Terminology (CPT): Coding system for physician services developed by the American Medical Association; basis of the HCPCS coding system. See Coding, HCFA Common Procedures Coding System (HCPCS).

Customary Charge: One of the factors determining a physician's payment for a service under Medicare. Calculated as the physician's median charge for that service over a prior 12-month period. See Customary, Prevailing, and Reasonable.

Customary, Prevailing, and Reasonable (CPR): Current method of paying physicians under Medicare. Payment for a service is limited to the lowest of (1) the physician's billed charge for the service, (2) the physician's customary charge for the service, or (3) the prevailing charge for that service in the community. Similar to the Usual, Customary, and Reasonable system used by private insurers. See Customary Charge, Prevailing Charge.

Deductible: A specified amount of covered medical expenses which a beneficiary must pay before receiving benefits. Medicare Part B has an annual deductible of $100.

Diagnosis-Related Groups (DRGs): System of classifying medical cases for payment on the basis of diagnoses; used under Medicare's prospective payment system (PPS) for inpatient hospital services.

Dual Eligibles: Medicare beneficiaries who also receive the full range of Medicaid benefits offered in their state.

Evaluation and Management Services: Nontechnical services provided by most physicians for the purpose of diagnosing and treating diseases and counseling and evaluating patients.

Federally Qualified HMO: An HMO that has satisfied certain federal qualifications pertaining to organizational structure, provider contracts, health service delivery information, utilization review/quality assurance, grievance procedures, financial status, and marketing information.

Fee-for-Service: Refers to paying physicians for individual medical services rendered, as opposed to paying them salaries or under capitation. CPR and fee schedules are examples of fee-for-service.

Fee Schedule: A catalog of predetermined payments for units of medical service.

Fee Schedule Payment Areas: Geographic areas within which payment under the fee schedule will be equal. Analogous to localities under current payment policies. See Geographic Adjustment Factor.

Fiscal Intermediary (FI): A private contractor who administers claims for Part A services (for example hospital and nursing home) and some Part B services (such as hospital outpatient departments).

Gaming: Gaining advantage by using improper means to evade the letter or intent of a rule or system.

Geographic Adjustment Factor (GAF): The adjustment made to a service's fee in the Medicare Fee Schedule to determine the correct payment in each fee schedule payment area. As defined in OBRA89, the geographic adjustment factor for a service is created by combining three separate adjustment factors, one for each component of the Medicare Fee Schedule: physician work, practice expense, and malpractice expense. The adjustment factors for physician work, practice expense, and malpractice are based on the same measures that underlie the GPCI. See Fee Schedule Payment Areas, Geographic Practice Cost Index.

Geographic Practice Cost Index (GPCI): An index summarizing the prices of inputs to physician services in an area relative to national average prices. The GPCI, originally defined by UI/CHER, is based on three components, reflecting the opportunity cost of physician work, the cost of goods and services that comprise practice expenses, and malpractice expenses. The GPCI is a single measure that combines these three fixed shares, while the GAF of the Medicare Fee Schedule allows for each service to reflect different shares, creating a GAF for each service. See Geographic Adjustment Factor.

Global Service: Package of clinically related services treated as a unit for purposes of billing, coding, or payment.

HCFA Common Procedure Coding System (HCPCS): Coding system based on CPT, but supplemented with additional codes for nonphysician services; required for coding by Medicare carriers. See Coding, Current Procedural Terminology (CPT).

Health Maintenance Organization (HMO): An organization that provides comprehensive health services to its members in return for a fixed prepaid fee. There are four types of HMOs: group, staff, independent practice association, and network.

Health Professional Shortage Areas (HPSAs): Replaces Health Manpower Shortage Areas (HMSAs). A Health Professional Shortage Area means any of the following which the Secretary of the Department of Health and Human Services determines has a shortage of health manpower: (1) an urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; (3) a public nonprofit private medical facility. Designated HPSAs can apply for National Health Service Corps (NHSC) personnel, or be eligible for the NHSC scholarship program or health profession student loan program.

Limited License Practitioner (LLP): A professional licensed to perform certain health services in independent practice (for example, podiatrists, dentists, optometrists, and chiropractors).

Locality (Medicare): A geographic area for which a carrier calculates prevailing charges. Localities can be states, aggregations of counties, parts of counties, metropolitan zip code areas, or townships.

Maximum Allowable Actual Charge (MAAC): A limitation on billed charges for Medicare services provided by nonparticipating physicians. For physicians with charges exceeding 115 percent of the prevailing charge for nonparticipating physicians, MAACs limit increases in actual charges to 1 percent a year. For physicians whose charges are less than 115 percent of the prevailing, MAACs limit actual charge increases so they may not exceed 115 percent. See Actual Charge, Nonparticipating Physician.

Medicaid: A program of health insurance for the poor and medically indigent. States share in financing the program and determine eligibility and benefits consistent with federal standards.

Medicare Economic Index (MEI): An index that tracks changes over time in physician practice costs and general earnings levels. Since 1975, increases in prevailing charge screens have been limited increases in the MEI. See Prevailing Charge.

Medicare Fee Schedule: The fee schedule to be used by Medicare to pay for physician services beginning January 1, 1992. This fee schedule is based on resource costs, and composed of factors representing physician work and practice costs.

Medigap Insurance: Private health insurance policies providing benefits not covered by Medicare, such as coinsurance.

Model Fee Schedule: The sample fee schedule developed by HCFA in 1990 from Phase I of the Hsiao study.

National Practitioner Data Bank: A permanent record maintained by the U.S. Public Health Service of disciplinary actions taken against physicians and all payments made on behalf of physicians for actual or potential malpractice claims.

Nonparticipating Physician: A physician who does not sign a participation agreement, and therefore is not obligated to accept assignment on all claims. See Participating Physician, Participating Physician and Supplier Program.

Outcome: The consequence of a medical intervention on a group of patients.

Overvalued Procedures: Procedures whose prevailing charges have been reduced because they were considered "overvalued" by historical CPR.

Part A (Medicare): The Hospital Insurance program, which covers the cost of hospital and related post-hospital services. As an entitlement program, it is available without payment of a premium. Beneficiaries are responsible for an initial deductible per spell of illness and coinsurance for some services.

Part B (Medicare): The Supplementary Medical Insurance program (SMI); covers the costs of physician services, outpatient laboratory and X-ray tests, durable medical equipment, outpatient hospital care, and certain other services. As a voluntary program, Part B requires payment of a monthly premium. Beneficiaries are responsible for a deductible and coinsurance payment for most covered services. See Beneficiary.

Participating Physician: A physician who signs a participation agreement, agreeing to accept assignment on all Medicare claims for one year.

Participating Physician and Supplier Program (PAR): A program which provides financial and administrative incentives for physicians and suppliers to agree in advance to accept assignment on all Medicare claims for a one-year period.

Peer Review Organization (PRO): Organization contracting with HCFA to review the medical necessity and the quality of care provided to Medicare beneficiaries; formally titled Utilization and Quality Control Peer Review Organization.

Physicians Practice Cost and Income Survey (PPCIS): A survey of a national sample of physicians regarding practice characteristics, costs, and reimbursement, conducted by National Opinion Research Center (NORC) in 1984 with a follow-up in 1987; sponsored by HCFA and ASPE.

Practice Expense: The cost of nonphysician resources incurred by the physician to provide physician services. Examples are salaries and the cost of fringe benefits received by nurses, physician assistants, and receptionists who are employed by the physician, and the expenses associated with purchase and use of medical equipment and supplies in the physician's office.

Practice Guidelines: Clinical recommendations for patient care, based on knowledge of effectiveness of medical practices and procedures.

Premium: An amount paid periodically to purchase medical insurance benefits; for Medicare Part B services in 1991, beneficiaries must pay a premium of $29.90 per month.

Prevailing Charge: One of the factors determining a physician's payment for a service under Medicare. Currently set at the 75th percentile of customary charges of all physicians in the locality. Since 1976, its growth has been limited to the increase in the Medicare Economic Index (MEI). See Customary Charge; Customary, Prevailing, and Reasonable; Medicare Economic Index.

Procedure Coding: See Coding.

Professional Component: The part of the relative value or fee for a procedure that represents physician work.

Professional Liability Insurance (PLI): The insurance physicians purchase to help protect themselves from the financial risks associated with malpractice claims and awards.

Relative Value Scale (RVS): Index that assigns weights to each medical service; the weights represent the relative amount to be paid for each service.

Resource Costs: The costs of the inputs used by an efficient physician to provide a service or procedure, including both the costs of the physician's own time and effort and the costs of nonphysician inputs. The apparently redundant use of "resource" with "costs" is a convention used to indicate the average costs of an efficient physician, as distinguished from cost-based reimbursement such as that used for hospitals prior to the prospective payment system.

Resource-Based Relative Value Scale (RBRVS): An RVS that is based on resource costs.

Socioeconomic Monitoring System (SMS): A system of annual and supplemental surveys of physicians directed by the American Medical Association Center for Health Policy Research. The SMS provides information on a range of characteristics including physicians' earnings, expenses, work patterns, and fees.

Specialty Differential: The difference in the relative value or amount paid for the same service when performed by different specialists.

Supplementary Medical Insurance Program (SMI): See Part B (Medicare).

Supplier: Providers, other than practitioners, of health care services. Suppliers under Medicare include independent labs, durable medical equipment providers, ambulance services, orthotists, prosthetists, and portable X-ray providers.

Technical Component: The part of the relative value or fee for a procedure that represents the costs of doing the procedure excluding physician work.

Upcode: To bill for a service more intense, extensive, or costly than that which was provided.

Usual, Customary, and Reasonable (UCR): A method of establishing payment used by private insurers that is comparable to Medicare's Customary, Prevailing, and Reasonable.

Utilization Review (UR): The review of services delivered by a health care provider or supplier to determine whether those services were medically necessary and appropriate.

Volume (Behavioral) Offset: The change in the volume of services that occurs in reaction to a change in fees. A 50 percent volume offset means that half of the savings from fee reductions will be offset by increased volume of services.

Volume Performance Standard (VPS): A mechanism included in OBRA89 to adjust fee updates based on how annual increases in actual expenditures compare to previously determined performance standard rates of increase.

BIOGRAPHIES

COMMISSION MEMBERS

PHILIP R. LEE

Philip R. Lee, M.D., professor of Social Medicine, has served as Director of the Institute for Health Policy Studies at the University of California, San Francisco (UCSF) since 1972. He served as chancellor of UCSF from 1969 to 1972 and was assistant secretary for Health and Scientific Affairs in the Department of Health, Education and Welfare from 1965 to 1969. Dr. Lee is the author of over 100 articles in the health field and has coauthored numerous books. His teaching and research endeavors in the field of health policy focus on health care for the elderly, prescription drugs, physician payment, reproductive health policy, and AIDS-related policies and costs. Dr. Lee is a frequent adviser to federal, state, and local health policymakers and serves on the boards of a number of nonprofit organizations. In July 1986, he was appointed Chairman of the Physician Payment Review Commission.

RICHARD V. (DICK) ANDERSON

Richard V. Anderson is Vice President, Medical Economics and Statistics for Kaiser Foundation Health Plan, Inc. and Kaiser Foundation Hospitals. Based in Kaiser Permanente's corporate office in Oakland, California, his responsibilities include rate-setting, benefit design, reporting, market analysis, and planning. He actively represents the Plan in relations with employers, consultants, government agencies, business coalitions, and other external organizations. Mr. Anderson began his career with Kaiser Permanente in 1968 as a planning analyst. In 1978, he was named Director of the Department of Medical Economics and Statistics and in 1980 was elected a Vice President of Kaiser Foundation Health Plan, Inc. and Hospitals. Mr. Anderson received his bachelor of science degree from Washington State University and then spent two years studying at the University of Washington School of Medicine before taking a position in the school's Division of Arthritis. In 1967, Mr. Anderson enrolled at the University of California at Berkeley, earning a master of public health degree. In 1965, he completed Harvard Business School's Advanced Management Program.

JIM BOB BRAME

Jim Bob Brame, M.D., is a family physician from Eldorado, a small, isolated community in West Texas, where he practiced for more than 20 years. He is currently Director of the Office of Rural Health for the Texas Tech University Health Sciences Center and associate professor of family medicine. Dr. Brame's career-long interest has been improving access to and quality of rural health care, and he has served as a resource for federal and state legislation impacting on rural health care. He has assisted in the design and implementation of prototype rural health facilities in Texas and established clinics in Guatemala as president of Medica-Diversified. He has served as a consultant to the American Hospital Association's Council on Small/Rural Hospitals and Committee on Hospital Medical Staff and Medical Affairs. Dr. Brame is a past president of the Texas Medical Association and has held leadership roles in the Texas and American Academy of Family Physicians as well as many civic and charitable organizations.

P. WILLIAM CURRERI

P. William Curreri, M.D., is President of Strategem of Alabama, Inc., and Executive Vice President of Strategem, Inc., an international marketing and consulting firm in the health care field. He received his undergraduate education at Swarthmore College and his medical degree from the University of Pennsylvania. His surgical residency was completed at the Hospital of the University of Pennsylvania. After three years in the U.S. Army as a lieutenant colonel at Brooke Army Medical Center, he served on the faculty of the University of Washington School of Medicine in Seattle (1974-1977) and was named the Johnson & Johnson Professor of Surgery while on the faculty of Cornell Medical Center in New York (1977-1982). Dr. Curreri served as professor and chairman and chief of surgery at the University of South Alabama in Mobile (1981-88). A member of numerous professional societies and organizations, Dr. Curreri has a history of distinguished leadership, having served as president of the American Burn Association, the Society of University Surgeons, the Halstead Society, and the American Association for the Surgery of Trauma. A major contributor to surgical literature, Dr. Curreri also serves as a consultant to the *Journal of Trauma* and on the Advisory Board of the *Journal of Burn Care and Rehabilitation, Annales Chirurgiae Et Gynaecologiae*, and the *Journal of Clinical Surgery*. He is past Editor-in-Chief of *The American Surgeon*. Dr. Curreri has been a frequent adviser to the National Institutes of Health and was a member of the Surgery, Anesthesia, and Trauma Study Section from 1980-1984, serving as chairman from 1986-1988. He is a member of the American Board of Surgery and formerly served on the Executive Committee of the Board of Governors of the American College of Surgeons, holding the position of Secretary from 1987-1989.

KAREN DAVIS

Karen Davis, Ph.D., is Chairman of the Department of Health Policy and Management in the School of Hygiene and Public Health with a joint appointment as professor of Economics at Johns Hopkins University. Positions previously held by Dr. Davis include deputy assistant secretary for Planning and Evaluation/Health at the U.S. Department of Health and Human Services; administrator of the Public Health Service, Health Resources Administration; Senior Fellow at the Brookings Institution; visiting lecturer at Harvard University; and assistant professor, Rice University. Dr. Davis is Director of The Commonwealth Fund Commission on Elderly People Living Alone. In addition, she is a member of the Institute of Medicine (National Academy of Sciences) and the Maryland Governor's Commission on Health Care Policy and Financing. She also sits on several boards and committees concerned with health policy issues. Dr. Davis is the author of numerous books and articles on health economics and policy analysis including *Health Care Cost Containment; Medicare Policy: New Directions for Health and Long Term Care; Health and the War on Poverty: A Ten Year Appraisal; and National Health Insurance: Benefits, Costs and Consequences*. Dr. Davis holds her Ph.D. in economics from Rice University.

JOHN M. EISENBERG

John M. Eisenberg, M.D., M.B.A., is Sol Katz Professor of General Internal Medicine and Chief of the Section of General Internal Medicine at the University of Pennsylvania. He is a graduate of the Washington University School of Medicine, St. Louis. After his residency in internal medicine at the Hospital of the University of Pennsylvania, Dr. Eisenberg was a Robert Wood Johnson Foundation Clinical Scholar and earned a master of business administration degree at the Wharton School. He is now a Senior Fellow of the University of Pennsylvania's Leonard Davis Institute of Health Economics. Dr. Eisenberg is a member of the Board of Governors of the American Board of Internal Medicine. He has served as president of the Society of General Internal Medicine and as a vice president of the Society for Medical Decision Making. He has served as chairman of the Council of Medical Societies of the American College of Physicians and was a member of its Board of Regents. He is currently a member of the College's Health and Public Policy Committee. Previously, he was a member of the Health Care Technology Study Section of the National Center of Health Services Research. Dr. Eisenberg presently serves as President-elect of the Association for Health Services Research. He is a member of the Institute of Medicine (National Academy of Sciences), the American Society for Clinical Investigation, the Interurban Clinical Club, and the Association of American Physicians. Dr. Eisenberg has served as a consultant to and member of the editorial boards of several major medical and health policy journals. He is the author of *Doctors' Decisions and the Cost of Medical Care* and has published over 1,200 articles and chapters on topics such as physician practice, test use and efficacy, medical education, and clinical economics.

JACK GUILDROY

Jack Guildroy is a member of the Board of Directors of the American Association of Retired Persons (AARP). Previously, he served as chairman of the Association's New York State Legislative Committee and on AARP's National Legislative Council. An educator for 37 years until his retirement in 1978, Mr. Guildroy taught mathematics and social studies in secondary schools in New York and Massachusetts. Most of his career was devoted to counseling students at the high school level. A cofounder of the New York State Counselors Association, he also worked actively with the College Board and its Committee on Guidance. He authored articles on the ethical-legal problems of counselors in the *College Board Review*. Mr. Guildroy helped establish the Retired Educators Chapter of the Great Neck Teachers Association. He is a board member of the Friends and Relatives of the Institutionalized Aged, Inc. Mr. Guildroy is a graduate of the University of Rochester with a bachelor's degree in mathematics and master's in history. In addition, he has a permanent certificate in counseling from Columbia University Teachers College and has taken graduate studies at New York University and the New School for Social Research.

ROBERT B. KELLER

Robert B. Keller, M.D., is an orthopedic surgeon practicing in Belfast, Maine. He is Executive Director of the Maine Medical Assessment Foundation, a health services research organization in Maine which deals with issues of variations of practice patterns, physician feedback and behavior change, and outcomes research. He graduated from Dartmouth College and received his medical degree from Cornell Medical School. After serving in the U.S. Navy, he undertook training in orthopedics in the Harvard University Combined Residency Program. He is an associate professor of Orthopedic Surgery at the University of Massachusetts Medical School. A member of numerous professional societies, he serves on several committees of the American Academy of Orthopedic Surgeons and chairs the Committee on Outcomes. He has contributed several articles and chapters on the subject of small area analysis and physician feedback and is a co-investigator of a medical effectiveness/outcomes research team evaluating low back pain and surgical outcomes. He is past president of the Maine Medical Association and a member of the Board of Directors of Medical Mutual Insurance Company of Maine, and he serves on the Health Policy Advisory Council of the State of Maine.

CAROL ANN LOCKHART

Carol Ann Lockhart, Ph.D., most recently began her own health systems relations and policy consulting firm. Until December 1990, she was the Executive Director of the Greater Phoenix Affordable Health Care Foundation, a business and health coalition concerned about health care and cost issues. She has held local and state public health positions, including director of three divisions of the Arizona, Department of Health

Services (ADHS)--Health Resources, Family Health, and the Arizona Health Care Cost Containment System (AHCCCS) for which she was acting director when it was created in 1981. Coauthor of two books on labor relations in health care, Dr. Lockhart has taught in baccalaureate and master's programs in schools of public health, health administration, and nursing. Her doctoral studies in health policy were done at the Heller School at Brandeis University. Dr. Lockhart recently served as Chairman of the Subcommittee on Employer Incentive Programs of the Arizona Joint Legislative Committee on Health Care, and she currently serves as a board member of the Arizona Council for Graduate Medical Education and the Arizona Council for Mothers and Children. Her other appointments include the AHCCCS Medicaid Advisory Committee and the ADHS Date Advisory Committee, plus various other organizational, community, and editorial boards and committees.

WALTER B. MAHER

Walter B. Maher is the Director of Federal Relations for Chrysler Corporation. He is responsible for the development and promotion of legislation that carries forth Chrysler's human resources objectives. Mr. Maher is particularly involved in the advancement of programs and policies that would assist businesses in controlling health care costs. He has been with Chrysler since receiving his L.L.B. from Georgetown University in 1963. Prior to his current position, he served as the Director of Benefits at Chrysler. Mr. Maher is on the Board of Directors of the Washington Business Group on Health and is actively involved with the National Leadership Coalition for Health Care Reform. He also is a member of the National Academy of Social Insurance and served on the Labor and Employee Benefits Committee of the U.S. Chamber of Commerce and on the Employee Benefits Committee of the National Association of Manufacturers. He was co-chairperson of the Governor's Task Force on Access to Health Care for the State of Michigan and was a member of the Institute of Medicine's Council on Health Care Technology.

WALTER J. McNERNEY

Walter J. McNerney is the Herman Smith Research Professor of Health Policy at the Kellogg Graduate School of Management and chairman of Walter J. McNerney and Associates, a management consulting firm in the health field. From 1961-1978, Professor McNerney served as the president of the Blue Cross Association and, from 1978-1981, as president of the Blue Cross and Blue Shield Associations. These organizations administered 105 plans geographically dispersed throughout the country, covering more than 120 million persons and annually distributing health care benefits amounting to approximately $55 billion through private and public programs. Prior to 1961, Professor McNerney was in hospital and medical center administration and served on the faculties of the Graduate School of Public Health, University of Pittsburgh and the Graduate School of Management, University of Michigan. Professor McNerney serves on the boards of five national companies, and he is chairman of American Health Properties. His current appointments include: Advisory Panel of Assessment of Medical Technology, Office of Technology Assessment; Commission on the Future Structure of Veterans Health Care, U.S. Department of Veterans Affairs; National Advisory Council for Health Care Policy, Research and Evaluation, U.S. Department of Health and Human Services; and Chairman, Board on Health Care Services, Institute of Medicine (National Academy of Sciences). He has served on numerous other national boards and commissions. Professor McNerney is an Associate Member of the American Society of Orthopedic Surgeons, a member of Yale University Dean's Council, and a board member of Value Health, Inc. Professor McNerney has published three books, two monographs, several book chapters, and more than 50 articles. Among the awards he has received are the Award of Merit, Healthcare Planning Forum; the Award of Honor and Justice, Ford Kimbell Awards, American Hospital Association; Yale Medal; Special Award for Meritorious Service, American Medical Association; Silver Medal Award, American College of Hospital Administrators; and Doctor of Humane Letters, Rush University.

THOMAS R. REARDON

Thomas R. Reardon, M.D., has maintained a busy general practice in Portland, Oregon, for nearly 25 years. He is a graduate of the University of Colorado Medical School. Dr. Reardon has been involved in activities on behalf of organized medicine at the county, state, and national levels. He now represents the American Medical Association's (AMA) Hospital Medical Staff Section at the AMA House of Delegates. In addition, Dr. Reardon had served on the AMA Task Force on Physician Manpower. Prior to his tenure as president of the Multnomah County Medical Society from 1980-1981, Dr. Reardon served on several committees including peer review and grievance. He later held the offices of vice president and president of the Oregon Medical Association (OMA). Dr. Reardon served as chairman of several committees of the OMA, including the Committees of Private Practice, Hospital Relations, Health Planning, and Legislation and the Board of Censors and Ethics. In addition to his involvement with organized medicine, Dr. Reardon has assisted his community by serving on various task forces to study health care for the mentally indigent. He has maintained an active liaison with the elderly community and participated on Congressman Ron Wyden's task force on Medicare reimbursement.

UWE R. REINHARDT

Uwe R. Reinhardt, Ph.D., is the James Madison Professor of Political Economy at Princeton University, where he has been teaching since 1968. He received his Ph.D. in economics from Yale University and an honorary doctorate from the Medical College of Pennsylvania in 1987. Professor Reinhardt is a member of the Washington, D.C.-based National Leadership Council on Health. He has served on several councils and task forces, such as the Governing Council of the Institute of Medicine, National Academy of Sciences; the National Health Care Technology Council of the Department of Health, Education, and Welfare; and the Veterans Administration's Special Medical Advisory Group. He has also served on a number of editorial boards of major health policy and economic journals. Professor Reinhardt is the author of *Physician Productivity and the Demand for Health Manpower* and numerous articles on health economics, accounting, and corporate finance. His work in the latter area has included financial analysis of the Lockheed L-1011 Tri-Star, cost-benefit analysis of the Space Shuttle, and pricing strategies for the Space Shuttle. Dr. Reinhardt's consulting activities have included work for the U.S. Department of Health and Human Services, Mathematica Policy Research, the Urban Institute, and Econ Incorporated. He has been a consultant in management training, primarily in managerial economics and corporate finance, for several major corporations.

PAUL B. GINSBURG, Ph.D., is the Executive Director of the Commission. He has long and varied experience with a wide range of health care financing issues, including physician payment, hospital payment, health insurance, and alternative delivery systems. Prior to joining the Commission, Dr. Ginsburg was a senior economist at the RAND Corporation, where he led projects on preferred provider organizations, Medicare prospective payment, physician payment, and cost-containment in employee-based health plans. He was deputy assistant director for Income Security and Health at the Congressional Budget Office, where he prepared analyses for the Congress on federal health policy issues with significant budgetary implications. Dr. Ginsburg has served on the faculties of Duke University and Michigan State University. He earned a doctorate in economics at Harvard University in 1971.

LAUREN B. LeROY, Ph.D., is the Deputy Director of the Commission. Dr. LeRoy came to the Commission after serving as associate director of the Commonwealth Fund Commission on Elderly People Living Alone. Prior to that, she was assistant director of the Institute for Health Policy Studies, University of California, San Francisco, and the director of the Institute's Washington office. She also spent several years working on health care financing legislation in the Department of Health, Education, and Welfare. Dr. LeRoy's research interests and published work have focused on physician training and practice, the nurse labor market, and aging issues. Dr. LeRoy received her doctorate in social policy planning from the University of California, Berkeley.

JIM BAHR is an Analyst at the Commission. He took his master of science in education at the University of Pennsylvania. Having worked as a freelance programmer/analyst in Philadelphia for several years, he joined the Commission staff to develop in-house computational capabilities. At the Commission, in addition to the provision of programming and technical expertise, his analytical work has focused on development of simulations on the impact of the Medicare Fee Schedule, payment for psychiatric services, and rural versus urban costs of practice.

ANNETTE B. BERGSTROM recently joined the Commission as the Executive Assistant. She received her bachelor's degree from Mississippi State University in Starkville. Until joining the Commission, she worked for Senator Bill Bradley as a legislative secretary primarily responsible for administration of his legislative staff. As assistant to the Executive and Deputy Directors, she coordinates all ongoing Commission activities.

DAVID C. COLBY, Ph.D., is a Principal Policy Analyst at the Commission. He received his doctorate in political science from the University of Illinois. Previously, he held faculty and administrative positions at Williams College and the University of Maryland, Baltimore County. From 1986 to 1987, he was a Robert Wood Johnson Health Finance Fellow. At the Commission, he has developed simulations to estimate Medicare Fee Schedule payments, to identify overvalued procedures, and to study the impact of the fee schedule on physicians and beneficiaries. He is currently working on Medicare anesthesia and assistant-at-surgery issues and analyzing physician payments under Medicaid. In addition to his analytical and research responsibilities, he is a member of the Commission Staff Executive Committee.

TERESA DeCARO is an Analyst at the Commission. She will receive her master's degree with advanced certification in health and public policy from the University of Maryland in May. She is a registered nurse with extensive experience in the care of the critically ill and elderly. Previously, she founded and chaired a child care advocacy group for reform of state and local child care legislation and regulation. As the president of the school's graduate student organization, she developed programs targeted at broadening the supportive and representative capabilities of the student body. Her focus at the Commission includes the refinement of the scale of relative work for the Medicare Fee Schedule and the impact of fee schedule changes on payment for trauma surgery.

CHRISTOPHER HOGAN, Ph.D. is a Senior Analyst at the Commission. He holds a doctorate in eonomics from Northwestern University. Before joining the Commission staff, Dr. Hogan was a Service Fellow at the National Center for Health Services Research and a Senior Economist with the Consolidated Consulting Group. He is primarily responsible for the Commission's annual report on the Volume Performance Standard. His current work includes the 1992 fee schedule conversion factor and the volume (or behavioral) offset.

ROZ DIANE LASKER, M.D., is a Principal Policy Analyst at the Commission. She received her medical degree from the University of Pittsburgh School of Medicine. Following her residency training in internal medicine, she completed a fellowship in endocrinology and metabolism at the National Institutes of Health. Dr. Lasker was previously on the faculty of the University of Vermont College of Medicine and has published numerous articles in basic and clinical endocrinology. Since joining the Commission in 1987, she has combined research, analysis, and consensus processes to address policy issues related to the development of a resource-based fee schedule for Medicare. Her work has focused primarily on five areas: payment and coding for evaluation and management services, payment for surgical global services, payment for electrocardiograms, evaluation of the Hsiao study, and refinement of the scale of relative work. In addition to her analytic and research responsibilities, Dr. Lasker is a member of the Commission Staff Executive Committee.

KATHERINE MACENKO is a Junior Analyst at the Commission. She received her bachelor's degree from Miami University, Oxford, Ohio. Previously, she worked as staff in the U.S. House Of Representatives for Representative Willis D. Gradison, Jr., where her work included casework in the areas of Medicare and Social Security. Her work at the Commission has focused on beneficiary issues, assistants-at-surgery, and the impact of technology on volume performance standards.

SHERAN ESTES McMANUS is the Administrative Officer of the Commission. Having received her degree from the University of Maryland, she continued her studies at the George Washington University. She has worked in the health policy arena for several years and has extensive experience in the area of grants and contract administration. She was previously Executive Associate of the George Washington University's National Health Policy Forum and served in various capacities at the U.S. Department of Health and Human Services. At the Commission, she is responsible for financial management and administration. In addition, she oversees the production of all Commission publications.

KATIE MERRELL is a Senior Analyst at the Commission with a background in math and economics. Prior to joining the Commission staff, she worked at Abt Associates for five years, where she was involved in a variety of projects including the cost effectiveness of the Medicare hospice benefit and the dynamics of participation in the Special Supplemental Food Program for Women, Infants, and Children (WIC). She has also been a research assistant at the Board of Governors of the Federal Reserve System. In addition, Ms. Merrell taught junior and senior high school mathematics and computer science and has been a part-time algebra instructor at the University of the District of Columbia. She has been involved in the Commission's work on geographic payment areas and practice expenses.

MAUREEN MOLLOY MORROW is an Analyst at the Commission. She holds a master's degree in public health with a concentration in health policy from Johns Hopkins University. She is a registered nurse with more than 15 years of experience in staff and management positions in the areas of intensive care and cardiac rehabilitation. Previously, she was the information programs manager at the National Association of Children's Hospitals and Related Institutions. At the Commission, she has focused on payment for surgical global services, coding for evaluation and management services, and the implications of the Medicare Fee Schedule on payment to nonphysician practitioners.

CURT D. MUELLER, Ph.D., is a Senior Analyst specializing in health economics and health policy. His current work focuses on the cost of medical practice and professional liability insurance expenses and how these are to be included in the Medicare Fee Schedule. Previously, he worked as an economist at the National Center for Health Services Research. His responsibilities included design of the institutional population component of the 1987 National Medical Expenditure Survey and research on health expenditures. He also served on the faculty of the Department of Public Administration at Syracuse University. He holds a doctorate in economics from the University of North Carolina at Chapel Hill.

VICKY L. PEBSWORTH is an Analyst at the Commission. She is on a one-year leave of absence from the master's program in health services research at the School of Public Health, University of California, Los Angeles. As a registered nurse for 15 years, she worked in cardiac surgical intensive care and then owned and managed a home health agency. Previously, she was the Medical Administrator for New Mexico's Medicaid Waiver programs. At the Commission, her work has focused on refining the scale of relative work, evaluating Phase II of the Hsiao study, and analyzing the response of private payers to the implementation of the Medicare Fee Schedule.

ANNE LENHARD REISINGER, Ph.D., a Senior Analyst at the Commission, is on a one-year leave from her position as Associate Director of the Graduate Program in Public Policy and Administration and as an assistant professor in the Department of Political Science at Columbia University. She holds a master's degree in public policy analysis and a doctorate in political science from the University of Rochester. At the Commission, she focuses on Medicaid physician payment and issues of Medicare beneficiary access to care.

ANNE SCHWARTZ is an Analyst at the Commission. She holds a master's degree in health policy and finance from Johns Hopkins University. Previously, she worked as staff in the U.S. House of Representatives for the Select Committee on Children, Youth, and Families and for Representative Claudine Schneider, where her work involved health, education, and child care issues. At the Commission, her work has focused on physician payment under Medicaid, beneficiary issues, and payment to limited license practitioners.

DAVID W. SHAPIRO, M.D., J.D., is a Senior Analyst at the Commission. He received his medical degree from the University of California, Los Angeles School of Medicine and his law degree from Yale Law School. After completing a residency in primary care internal medicine at UCLA, he was a Veterans Administration/Robert Wood Johnson Clinical Scholar. At the Commission, he has been working on malpractice reform, payment for electrocardiograms, physician practice profiling, and practice guidelines.

ANTHONY M. TUCKER is an Analyst at the Commission. He holds a master in public administration degree from the Kennedy School of Government, Harvard University. Mr. Tucker has a 16-year background in administrative and research information systems development and more than seven years of experience in health care policy and program operations research with an emphasis on managed care. His focus at the Commission includes capitation and related managed care issues and physician practice profiling.

SUSAN WALL is a Junior Analyst at the Commission. She received a bachelor of science degree in public health from the University of North Carolina at Chapel Hill. Her work at the Commission has centered on access to physician services in rural and urban underserved areas.

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